

THE OFFICIAL

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DIGEST

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AUGUST 1959



**THE CHIEF OF STAFF
REPORTS**

ARMY INFORMATION DIGEST



THE OFFICIAL MAGAZINE OF
THE DEPARTMENT OF THE ARMY

The mission of ARMY INFORMATION DIGEST is to keep personnel of the Army aware of trends and developments of professional concern. The Digest is published under supervision of the Army Chief of Information to provide timely and authoritative information on policies, plans, operations, and technical developments of the Department of the Army to the Active Army, Army National Guard, and Army Reserve. It also serves as a vehicle for timely expression of the views of the Secretary of the Army and the Chief of Staff and assists in the achievement of information objectives of the Army.

Manuscripts on subjects of general interest to Army personnel are invited. Direct communication is authorized to: The Editor, ARMY INFORMATION DIGEST, Cameron Station, Alexandria, Va.

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"THIS WE'LL DEFEND"—motto from the venerable seal of the U. S. War Office—keynotes this Special Issue devoted to the Biennial Report of the Chief of Staff. More than a progress report, this vital document summarizes the crucial problems confronting the Army today in its quest for modernity and maximum effectiveness in defense.

COMMAND LINE

Army Views On Vital Issues

ON FLEXIBILITY OF FORCES

"Developing and maintaining adequate military forces to cover the present spectrum of possible conflicts is not a simple matter of choosing between the atomic bomb and the rifle. Rather, it is a matter of arriving at a balanced division of resources to provide for flexible forces capable of making a wide variety of responses.

"Forces designed for massive nuclear retaliation, for example, exist for only one purpose—to deliver large-yield nuclear warheads on selected targets. Such forces are essential in total nuclear war, but the degree of force they represent is not appropriate in lesser forms of war and in 'cold war.' Their utility is limited primarily to the threat of their use—a threat which has become progressively less credible in this era of relative nuclear parity.

"Unless we have the means to apply in any limited war situation the precise amount and kind of force required, we cannot keep the Communists from nibbling away at the Free World—which in the long run could be just as deadly to the interests of the United States as inability to cope with the threat of all-out nuclear war."

Secretary of the Army Wilber M. Brucker
before the Association of Commerce
Baltimore, Maryland, 11 May 1959

ON COLLECTIVE SECURITY

"The strategic concept of this country for survival is Collective Security. It is a concept of which the military posture of the Nation is based. The reasons which led to the adoption of this national policy of Collective Security in the forties have not lost their urgency or their cogency in the fifties, nor will they in the foreseeable future.

"Basically, the doctrine of Collective Security requires strength among our allies around the world. They have the manpower and they have the will to preserve their independence. What most of the free world countries lack, is weapons to match the manpower and the will of their people. What we do, through our program of military assistance, is to provide such countries with appropriate weapons and with training in the use of those weapons."

Secretary of Defense Neil H. McElroy
before the Bureau of Advertising
New York City, 23 April 1959

Biennial Report
of
THE CHIEF OF STAFF, UNITED STATES ARMY
1 July 1957 to 30 June 1959

Chapter	Page
I The Army and National Security	3
II Army Operations and Training	10
III The Race for Technological Superiority	20
IV Army Logistics and Modern Management . . .	28
V Personnel and Improved Professionalism	33
VI Information and Related Activities	43
VII The Challenge Ahead	45

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U. S. ARMY MAGAZINE

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UNITED STATES ARMY
THE CHIEF OF STAFF

30 June 1959

Dear Mr. Secretary:

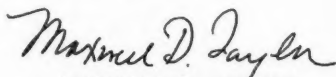
It has been two years since my last formal report to you on the operations and activities of the United States Army. This, together with the termination of my active service makes it appropriate that I provide you with a report of the progress and the reverses which have accrued to the Army over the spread of time from 1 July 1957 to the present date.

Taking as its line of departure the basic relationship of the Army to our national security, this report summarizes the major factors which have influenced the Army. Then, the high lights of the Army's achievements and difficulties are stated in terms of operations and training, research and development, logistics and management, personnel, and informational activities. In concluding, the report outlines those major unresolved problem areas which continue to affect the Army's development, and recommends broad courses of action for the Army in the years ahead, designed to strengthen its contribution to the deterrence of war and the attainment of our national objectives.

Much of the progress which the Army has made in this period of great change can be directly attributed to your able leadership and that of the Under Secretary and Assistant Secretaries of the Army, all of whom have contributed their acumen, wisdom, and experienced insight into the manpower, logistical, fiscal, and operational problems inherent in the management of the Army. The Army and its people have been indeed fortunate to have had such leadership.

I trust that this report will prove of interest and assistance to you in evaluating the status of the Army and as a partial record of its major activities during my last two years as Chief of Staff.

Sincerely,



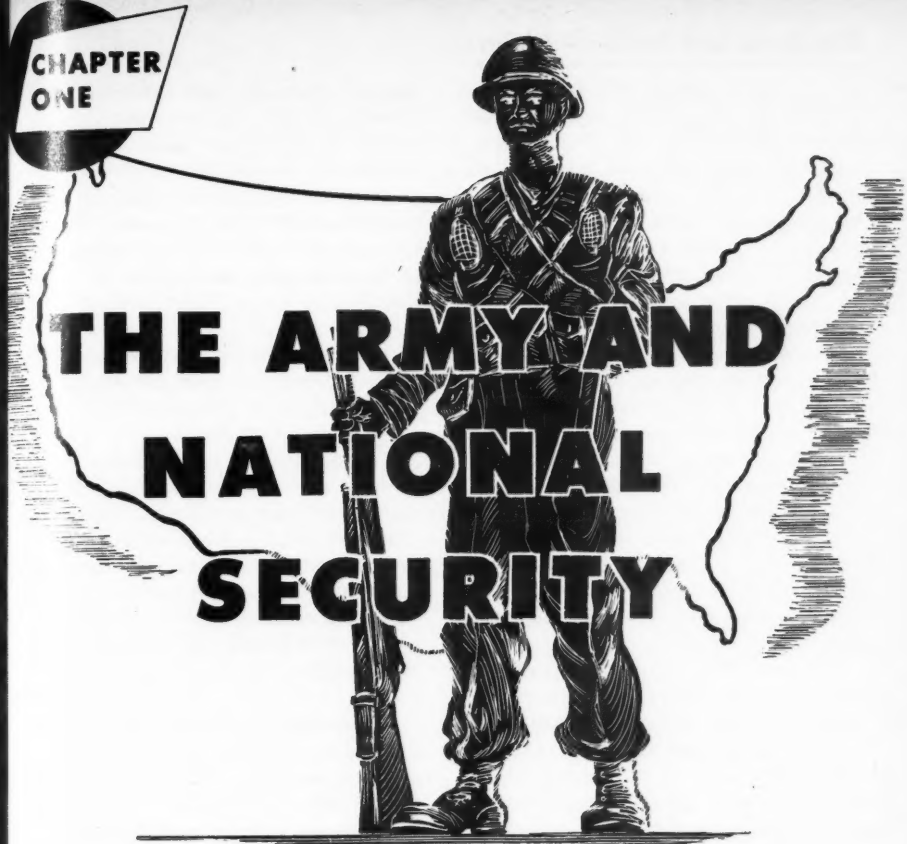
MAXWELL D. TAYLOR
General, United States Army
Chief of Staff

The Honorable Wilber M. Brucker

The Secretary of the Army

AUGUS

THE ARMY AND NATIONAL SECURITY



THROUGHOUT the period covered by this report, the United States Army has continued to develop its major programs in consonance with the basic guidance promulgated in the Chief of Staff's National Military Program in 1955. This program constituted the views of the Army as to the courses of action to be followed if the military component of our national strength was to contribute effectively to a sound national strategy for the attainment of our national objectives in a world political climate disturbed by the Soviet-dominated Communist power bloc.

The policies derived by the Army from the National Military Program—modified as necessary to meet continuously changing conditions—formed the body of principles by which the Army has lived and directed its efforts of the

past two years in working toward the achievement of its goals as a member of the Armed Forces defense team. The efforts to attain these objectives have met with varying measures of success in many areas and with set-backs in others. The purpose of this report is to review both the accomplishments and the reverses, to summarize the major influencing factors, and to discuss briefly what still remains to be done if the Army is to make a full contribution to national security.

The Changing Nature of the Threat.

All national defense efforts have significance only in relation to the threat to which they respond. In the past two years and today, the principal threat to world peace and U. S. national security has continued to be the expansion of ruthless international

The Army and National Security

Communism. There has been no reduction in the global extent of this threat confronting the United States and the community of free nations. Rather, the threat has been intensified by the political instability and susceptibility to penetration in its various forms of small nations and political groupings adjacent to the Communist complex of power. Coupled with this has been the continued remarkable revolution in science and technology, which has served not to insure the prospects of a peaceful world but to disturb seriously the world balance of power—in some instances to the possible advantage of the Sino-Soviet hegemony. Thus, the threat has been highly dynamic, and has acquired new dimensions and intensity in all areas—political, economic, and ideological, as well as military.

The new dimensions of the military threat derive largely from the implications of Soviet progress in two related areas: the development of intercontinental ballistic missile systems to supplement their long-range bomber force; and the acquisition of a strategically significant stockpile of nuclear weapons. To assess their true significance, these major developments must be viewed within the entire range of the military capabilities of the Communist bloc.

The USSR has expended vast resources in improving its military forces. Its army has been re-equipped with all types of modern weapons for ground combat, to include a wide variety of mobile atomic missile delivery systems and large tactical air armies. The Soviet navy has developed a formidable submarine fleet, and the existing Soviet long-range bomber force makes possible a significant air attack on the continental United States. Concurrently, extensive missile air defenses are under development around the key centers of the Soviet Union in order to lessen their vulnerability to air attack. At the same time, the USSR has provided great quantities of late model

materiel, aircraft, and technical assistance to the countries of the Communist bloc. This has enabled Communist China and North Korea to maintain massive, relatively well-equipped ground and tactical air armies and has strengthened the military capabilities of the European satellite states. Additionally, Soviet military assistance and materiel furnished to various ultranationalist groups in unstable areas has furthered the Communist potential for covert aggression as a means of attaining political objectives.

Throughout the range of Sino-Soviet military preparations there is evidence that a primary national objective is the development of preponderant military strength in all forms as an instrument of policy. For the accomplishment of this objective they appear willing to expend virtually unlimited effort in men, materials, and funds.

The Balance of Terror. The close relationship between military strength and the political policies of the Communist bloc—the Soviet Union in particular—is clear. With the growth of their military and atomic capabilities there has been increasing Soviet intransigence in international relations. In phase with their success in the missile and nuclear weapons fields, the Soviet Government has directly threatened numerous nations friendly to or allied with the United States, for the obvious purpose of detaching them from their international defense arrangements and impairing their will to resist Communist aggression.

Since World War II, the United States and its allies have had preponderant strength in the air-atomic field, and this condition has been the underlying premise of both our national military posture and the military planning connected with our international defensive alliances. However, during the period covered by this report, the Soviets have improved their nuclear capabilities so as to at least approach a condition of atomic parity with the

Free World. This condition—sometimes referred to as “the balance of terror”—taken in conjunction with the other forms of Communist military power, clearly shows the need for a serious reexamination of our national military strategy as a component of national policy, and the balance of the tridimensional military forces necessary to make that strategy effective.

Recent events are evidence that—under the condition of mutual equilibrium arising from a roughly equal capacity for reciprocal destruction—the Soviet-led bloc has exploited the world's fears of a general atomic war to its advantage. This has been accomplished by continuing Communist military and political aggression for limited objectives. Aggression of this nature has not been successfully checked by the massive retaliatory capabilities of the United States. The Communist capabilities for the continued employment of this technique of aggression under the balance of terror will probably cause serious questions to be posed as to the proper responses which the United States must make to deter war in all of its forms.

The Deterrence of War. The national policy for the deterrence of war has been fundamental in shaping the philosophy and actions of the Army. However, it is the Army's view that deterrence must take place at two integrated and concurrent levels of effort. These are: the deterrence of general atomic war, and the deterrence of limited war—the piecemeal aggression which, if not successfully curtailed, could seriously erode our national position.

In addition, should deterrence fail—either by design or by a miscalculation on the part of a potential aggressor—the United States must possess an integrated range of military means appropriate to respond to the nature of the threat. The quality and quantity of these forces must be such that they can present for the indefinite future a

balanced and stable deterrent in a high degree of readiness for any form of war. This must be coupled with effective systems of warning and decision-making.

Those elements of the integrated deterrent devoted primarily to the deterrent of general war must be so organized, equipped, trained, and deployed that they can endure an enemy first strike and retaliate on the centers of enemy power with a level of damage unacceptable to him.

Those forces especially suited for the deterrence of limited war—or effectively combating it before it can spread into a general atomic war—must be capable of rapid employment within a wide spectrum of military operations. These may vary in intensity from small patrol actions to major, sustained combat operations of considerable duration and scope. Moreover, these forces must also be capable of reinforcing general war operations if, despite all efforts, deterrence in this area fails.

The fact that the United States has deterred general war since 1945 but has become involved in varying degrees in six limited conflicts during this spread of time—mainland China, Greece, Korea, Indochina, Lebanon, and Taiwan—has led the Army to take the initiative in pointing out the imbalance in our military posture of deterrence. Further, in the light of the increasing frequency with which limited wars have occurred during the past fourteen years, the Army has made repeated recommendations to appropriate authority as to the courses of action viewed as essential to correct that imbalance.

Among the more important of these recommendations was the proposal that the higher levels of the Department of Defense and the Government consider the requirement for integrated deterrent strength horizontally—that is, in the context of functional, operational forces—rather than from the traditional vertical viewpoint of the compart-

The Army and National Security

mented, departmental structure of the Army, Navy, and Air Force. These functional operational forces would include the following:

First, a powerful atomic retaliatory force, visibly capable of destroying any aggressor who initiates a general war. This force is a composite of strategic means of the Air Force and Navy, comprised of both aircraft and missile delivery systems. For maximum deterrent effect, this offensive force must be guarded against surprise attack. It needs a defensive counterpart which is represented in the second category of forces—those involved in the air defense of the continental United States. These are composed of the interceptor aircraft of the Air Force, the surface-to-air missile units of the Army, and are supplemented by the Navy and our Canadian allies.

The third essential category of our functional deterrent forces are overseas deployments—those forces which are a shield impeding further expansion of Communism on the ground. These forces are of important military significance, not only in providing defensive strength in important strategic areas, but as a source of encouragement to United States' allies. The sight of American fighting men in the villages and cities along the Iron and Bamboo Curtains is a day-to-day reminder of the United States' intentions to stand by its international obligations. The overseas deployed forces are thus visible evidence of our national determination to carry out fully our responsibilities for mutual security.

To back up these forces, there must be the fourth category—strategic mobile reserves of all Services to assist the overseas deployed forces if they are attacked, or to move quickly to other areas of the world threatened with Communist aggression. Important elements of this strategic reserve strength are the civilian components which provide a cushion of strength for the active forces and the mobilization base necessary to support the strategic re-

serve forces in combat.

Finally, as a fifth category, are air and naval forces capable of keeping the air and sea lanes open for the deployment and support of the other categories of forces in the event of war, so that our strength can be brought to bear in timely manner at the decisive place.

Coupled with such an analysis of the force requirement for an integrated deterrent, the Army has recommended that the Joint Chiefs of Staff undertake to establish criteria of sufficiency in each category of such operational forces. Such action would insure that the various programs and weapons systems of all the Armed Forces are brought into focus with the changing nature of the threat, and would allow a more balanced distribution of the resources devoted to national security and the deterrence of war.

In keeping with these proposals, the Army has also recommended a program for improving the capabilities of the Army and its sister Services to deter and meet effectively the continuing challenge of limited war. The salient points of this program are: (1) modernization of the equipment of forces appropriate to limited war; (2) improved strategic mobility of limited war forces to include overcoming related logistical obstacles; (3) predesignation of the air and sea transport to move selected spearhead forces; (4) expanded and centralized joint planning and training; (5) publicizing our capability to deter or fight limited wars.

The foregoing Army views and recommendations have guided the Army's approach to its missions and tasks over the period covered by this report.

Army Missions and Tasks. The overall missions of the Army for the period of this report have been to contribute to the security of the Nation by providing adequate forces for prompt, sustained combat on land in any type of war and to furnish surface-to-air missile defense of the United States and

our forces overseas. The extent of the Army's contribution stems from the agreed strategic concepts which guide the plans and programs for all the military services. From this broad mission were derived the principal tasks of the Army. These are: *first*, to maintain forces overseas for the deterrence of aggression or for effective resistance to aggression if deterrence fails; *second*, to maintain mobile, combat-ready strategic forces in the United States for the rapid reinforcement of forward deployed forces, and to come to the aid of allies in areas where no U. S. forces are now deployed; *third*, to provide forces as required for the defense of the United States against air attack; and, *fourth*, to maintain a base for rapid mobilization, including strong, ready civilian component forces.

In the foregoing discussion of the need for a horizontal functional analysis of operational forces for the deterrence of war, it was pointed out that the forces involved in the air defense of the continental United States are the necessary general war defensive counterpart to our strategic atomic retaliatory force. In the light of continuing public and Congressional interest in continental air defense, the changing nature of the air threat, and some prevalent misconceptions of the Army's contribution in this field, the background and nature of this contribution are reviewed in the following.

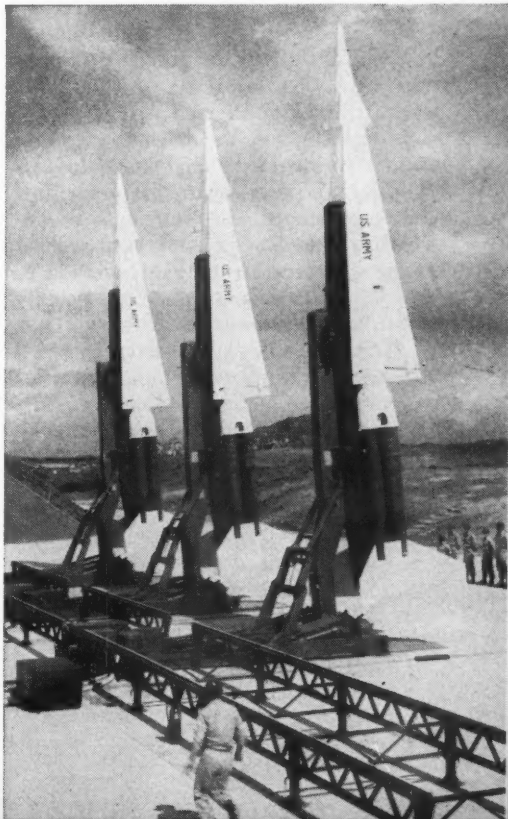
The Army came into the air defense field through a natural historical transition. At the outset, the Army manned the only weapons which could be fired from the ground at the first hostile aircraft, and thus has been in the anti-aircraft field since the inception of military airplanes. Later, the Army pioneered in the research and development of surface-to-air missiles, as a result of foreseeing in World War II the implications of mounting performance of bomber aircraft. Research and development on the Nike-Ajax missile began in 1945 and it became operational in December 1953, the first op-

erational missile of this kind in the U. S. arsenal.

The continuing responsibility of the Army in the air defense field has been repeatedly recognized in the official statements of service roles and missions, first in the so-called Key West Agreement and recently in the Department of Defense Directive, "Functions of the DOD and its Major Components," dated 31 December 1958. It should be noted that the Army is charged with organizing, training, and equipping air defense units, not only for the defense of the continental United States, but also for the defense of overseas commands and of military forces in the field. Continental air defense is only one part of the Army's job.

Thus, it is evident that the Army

"Nike-Hercules . . . can knock down any aircraft or air-to-surface missile that flies today or that can be foreseen in the next few years."





Army readiness assures that if a potential aggressor should strike "he will encounter the power of our Nation in the form of an American soldier and his ready weapons."

has a clearly established responsibility in air defense. It is perhaps more important that it can and does discharge this responsibility well. In passing from tube antiaircraft artillery to surface-to-air missiles, the Army has developed the training, administrative, and logistical organization necessary to support an expanding missile air defense system. Apart from the 39,000 officers and men actually manning surface-to-air missile batteries, the Army utilizes about 20,000 soldiers and civilians in the operation of the back-up training and administrative and logistical organization necessary to carry forward the air defense program. This organization and the experience derived from its operation belong uniquely to the Army and are assets not readily transferable to any other agency.

The concept of air defense which guides the Army's development of its weapons and tactics is important. The immediate air defense problem is to provide an effective defense against current and foreseeable enemy bombers and missiles. In recognition of the great cost of modern air defense weapons and the need to get the most defense from their use, the Army considers that first priority should be placed upon the defense of our retaliatory capability, our important cities and

other installations essential to national survival.

While Army missiles are often referred to as being for "point" defense, they can and do defend vital targets of substantial size which in the aggregate constitute extensive urban areas and complexes, any one of which may cover thousands of square miles. The Army surface-to-air missiles are designed to provide a building block type of air defense for these areas. In this concept, the basic building block is the missile battery which is a self-contained fire unit capable of fully autonomous operation. It is located well away from the defended installations so that it can destroy hostile bombers or air and submarine launched missiles before they can reach the target. The number of these batteries can be increased as desired until the price of penetration for the attacker becomes prohibitively high. This approach is but a new application of the old military principle that in organizing a defensive position, a commander first meets the needs for an effective defense of the most vital elements of the position. Then he uses his remaining resources to provide reconnaissance and outpost elements in as much depth as possible. In the same way, the Army stresses the need for providing a dense missile de-

ense for vital targets, after attaining which our remaining resources may be applied to extending the area defended by use of interceptors and possibly of interceptor type missiles.

The foregoing concept is sound for defense against either bombers or intercontinental ballistic missiles. To counter the latter threat the Army believes that it can and must provide as rapidly as possible, an antimissile defense of vital localities through the deployment of the Nike Zeus system. The more the problem of destroying the enemy missiles prior to launch is studied the more impressive becomes the difficulty, if not the impossibility, of countering such missiles if they are mobile, concealed, or hardened. It must be assumed that the USSR will take these passive defensive measures. The resulting invulnerability of the enemy missile system will place increased importance upon the earliest deployment of an antiballistic missile defensive capability as an indispensable part of our deterrent forces.

The ability of the United States to strike back adequately after an enemy first strike provides the only sure deterrent to general war; therefore, it is essential that we defend adequately our retaliatory capability. Unless an effective defense against surprise attack is in being, the retaliatory forces may be destroyed in large measure on the ground. Even if our bombers are able to leave their bases prior to the initial enemy attack, these bases must still be defended to provide the planes with a place to return. Otherwise, the Strategic Air Command will be a one strike force.

The Army's surface-to-air missile units currently furnish a vital element of the protection required. They are operational now and qualitatively are capable of meeting any type of threat from air-breathing type aircraft or missiles. They are developing the capability of coping with the ballistic missile. They must exist in quantity proportionate to their potential contribution

to the security of the United States and its forces in the field.

As the Army goes about its daily activities in preparation for its combat missions or in the discharge of its tasks around the world, its members and its leadership at all levels are deeply conscious of the significance of the role of the Army in our national security. With this realization there is a profound conviction that the changing nature of the threat and the resultant balance of terror have made the deterrence of all forms of war of greater import than has ever before been true in history. No single element of our national society better realizes this than those who wear the Army uniform.

By the nature of its missions—past and present—upon the Army devolves the difficult, dangerous, but highly important duty—if war should be forced upon us—of imposing the will of the United States directly on an enemy at the source of his power and strength—on land—while shielding our own homeland from attack on the ground or through the air. Following the successful execution of these combat missions, it is the Army which then must maintain direct physical control of defeated enemy peoples, salvage the remnants of their war-damaged societies, and provide major assistance in restoring their devastated homelands and economic structures. In periods of international tensions following shifts in the world balance of power, it is the Army which must stand vigilant sentry duty overseas and at home, to provide convincing, direct evidence to any potential aggressor that wherever he may attempt to attack on the ground—or through the skies over our country—he will encounter the power of our Nation in the form of an American soldier and his ready weapons.

It has been in consonance with the foregoing concepts and sense of mission that the Army has lived and worked during the period of this report.



CHAPTER TWO

ARMY OPERATIONS AND TRAINING

Readiness

Army Reorganization. An important criterion of the Army's ability to perform its missions and tasks is the state of readiness which is maintained by its elements. The accomplishments discussed subsequently were made despite the funding restrictions imposed on the Army which delayed the achievement of the overall readiness posture desired. Essential equipment modernization discussed elsewhere in this report has never reached the desired objective.

Among the steps taken over the period which significantly affected the Army's readiness was the completion during the latter half of 1957 of the reorganization of the active Army's major combat units—the infantry, airborne, and armored divisions—in order

to give the Army in the field a dual capability for atomic as well as non-atomic combat.

In the infantry and airborne divisions, the former triangular structure based on three infantry regiments was replaced by a pentomic structure in which the key elements are five infantry battle groups. This reorganization capitalizes on advanced technology and modern equipment in order to increase span of control, to reduce the number of subordinate headquarters and support elements, and to increase effective "foxhole" fighting strength. The mobility and flexibility of the division were improved, and the capability for delivering nuclear weapons was made organic, using interim weapons systems.

An important characteristic of the new divisions is their ability to absorb new weapons and equipment systems as they become available. In this connection, there continues to be an urgent requirement for small, close-range sub-kiloton atomic weapons as well as new non-atomic means for inclusion at the battle group level in the reorganized division, in order to enhance the power of these units and to enable them to operate with a greater degree of independence in mobile, fast-breaking situations.

Because of the inherent flexibility and versatility in its former organization, the armored division was not converted to the pentomic structure. However, the atomic firepower and other capabilities which the infantry and airborne divisions had gained were incorporated.

Since completion of this reorganization, field exercises, studies, and tests have supported the soundness of the pentomic concept. The modifications for improvement motivated by these tests have been applied.

Another significant development completed in Army organization has been in the field of missile commands, three types of which have been developed—airtransportable (equipped with the Honest John rocket), medium (equipped with the Honest John rocket and the Corporal guided missile), and heavy (equipped with the Redstone guided missile). Two airtransportable and two medium missile commands have been activated, although some modifications in their final organizational structure can still be anticipated as a result of tests and recommendations from the field. While no heavy missile commands have been activated, an existing type of organization—the field artillery missile group, Redstone, of which there are three in being—is capable of ready conversion to a heavy missile command. Exclusive of those battalions organic to missile commands, the Army has a total of seven battalions of Honest John and

nine of Corporal. Two self-propelled battalions armed with the Lacrosse missile have been activated on a tentative organizational basis. Contributing significantly to the effectiveness of missile units by providing them with technical and custodial warhead support is the artillery warhead support group, for which a tentative organization has been adopted.

Past reorganizations or reductions in the Army have resulted in breaks in unit traditions or loss of unit identity, to the overall detriment of esprit de corps. Thus, concomitant with the pentomic reorganization and the development of many new types of units, the Combat Arms Regimental System was devised and placed in effect. By this means, all units of the combat arms are identified with an historical regiment of the arm concerned and are entitled to the lineage and battle honors of that regiment. The system is highly flexible and permits assignment of battle groups or battalions and company-sized units of the same regiment to several different divisions or geographical areas.

Modernization. Reorganization along the lines described is an important aspect of achieving the modernization which will permit the combat units of the Army to respond to the demands of modern war. Army combat forces are designed to make maximum use of the greater firepower, improved mobility, and more efficient communications which technology has made possible. While much has been accomplished in all three of these areas, much remains to be done.

For example, the battlefield of the future will require independent or semi-independent operations by combat forces of all types. To be able to move through enemy resistance at will, even small units require readily available firepower, including nuclear firepower. This requirement is being met through the nuclear delivery capability now organic to Army divisions and

Army Operations and Training



"... a new family of armored vehicles having lighter weight, greater killing power, reduced logistical demands is an essential requirement."

through the firepower from supporting forces equipped with longer range missiles capable of delivering nuclear warheads on targets deep behind enemy lines.

Another essential requirement for modern battlefield effectiveness is a degree of mobility which will permit commanders to shift forces rapidly by land or air. The armored personnel carrier, the helicopter, and the fixed-wing aircraft are all being utilized to meet this need.

Control of the rapidly moving, small units of today's Army over wide areas requires more effective communications and control equipment than has been available in the past. With wire systems no longer adequate to serve as the primary means of battlefield communication, the Army has developed a new family of radios which are lighter in weight, more reliable and more flexible than the older models.

Strategic Communications. Concurrent with the tactical demands imposed

by the pentomic organization, equally critical problems and requirements in strategic and global communication and electronic systems beset the Army. These included national command control and continuity of government in event of an enemy nuclear attack; disposition of U. S. Army elements throughout the world with vastly increased communications traffic loads; establishment of the joint and unified command structure of the Defense Establishment; new and expanded intelligence demands; new air defense weapon, warning, and command control systems; rapidly expanding use of electronic computers and automatic data processing systems and a new era of space technology for both military and national interests.

These many new strategic and national requirements could not be satisfied by the existing global communication system of the Army—the Army Command and Administrative Network. As an interim solution, major commercial communications companies

were called on for support in assisting the Army in providing emergency communications for the President, the Federal Government and the Defense Establishment—as well as for air defense weapon and fire coordination systems.

As a long-range solution of the many new strategic requirements, plans were initiated for a radically advanced communications system, known as the Universal Integrated Communications System. This system features a combination of real time and deferred service through automatic switching centers; markedly increased speed, security and accuracy through extensive automation; a high degree of standardization of signaling rates; integral electronic data processing; improved trunking means and multi-mode operation to include voice, teletypewriter, digital data, facsimile and video signals. Detailed engineering plans and subsequent development of major components of this system have already been initiated.

Training. A major effort has been devoted to training at the individual and unit levels and to the development of technical knowledge and professional skill through specialized military education.

Within the limits of available funds, Army field exercises and maneuvers were conducted in the United States and overseas, and in participation with the Navy and Air Force. The largest was a two-corps exercise conducted by the Seventh U. S. Army, involving approximately 125,000 troops. Smaller scale field exercises were conducted in the Pacific, Alaskan, and Caribbean areas. Within the continental United States, the major portion of resources available for field exercises was utilized in maneuvers designed to improve the readiness of the Strategic Army Corps (STRAC), with the 82d and 101st Airborne Divisions and the 4th Infantry Division each participating in a division-scale field exercise each year. Such exercises and maneuvers have per-

mitted the evaluation of the new divisional and other organizations, and the experience gained has been instrumental in developing the modifications which have been adopted.

With regard to individual training, during the past two years approximately 627,000 enlisted personnel underwent basic combat training, including 175,000 six-month trainees from the reserve components. The Army's 36 Service Schools—ranging from branch level through the Command and General Staff College and Army War College—graduated nearly 300,000 personnel between 1 July 1957 and 30 June 1959. Areas of instruction ranged from such fields as training of operators and support personnel for combat surveillance and target acquisition equipment to courses of study in the Military Assistance Institute for officers assigned to duty with Military Assistance Advisory Groups and military missions world-wide. This institute was established by the Department of Defense on 2 September 1958, with the Army designated as executive agent for its operation.

Another aspect of the Army School System is the Army Extension Course Program, which provides correspondence type instruction from 20 Army Service Schools and from the Army Logistics Management Center. By the end of 1958, enrollments in this program had reached an unprecedented total of over 165,000.

In the light of the advances being made in technology and due to the increasing complexity of military operations, the Army's need continued to grow for personnel with advanced levels of academic training. The programs under which such training is accomplished are described in Chapter V, "Personnel and Improved Professionalism."

Among significant actions taken with respect to the United States Military Academy was the adoption of a plan to permit an eventual expansion of the Corps of Cadets to a total of 4,250.

Army Operations and Training

During the period, the Army concurred in a Department of Defense proposal to request legislative changes in the method of appointment to the Service Academies to authorize a fixed annual input from each appointment category.

Combat and Doctrinal Development.

Chief doctrinal problems have stemmed from the need to meet the challenge of the nuclear weapon—both in its offensive use and in reducing the vulnerability of Army forces to enemy nuclear weapons. Tactics, organizations, and materiel have been under continuous study, development, and test with a view toward improving the Army's potential to fight in nuclear combat, as well as to improve its capabilities as a dual purpose force.

An important element of this effort is the activities of the Combat Development Experimentation Center (CDEC). Working under combat conditions with trained troops especially organized and equipped for the task, CDEC has examined the areas of mobility, control, and organization of basic combat and administrative units for modern warfare to assist in the formulation of doctrinal, organizational, and equipment concepts of the future.

Army Aviation. Capabilities in Army aviation have been improved in the fields of observation (including battlefield surveillance and target acquisition); air movement of troops and supplies in the combat zone; air mobility for ground reconnaissance; command, liaison, and communication; and battlefield casualty evacuation. The aircraft employed to perform these functions are capable of living in the field with the Army, of operating from unimproved fields, and of being maintained without benefit of elaborate ground facilities. Through these capabilities, aviation organic to Army units is providing a responsiveness to the demands of the arms and services which

gives enhanced mobility, flexibility, and battle efficiency to the ground combat forces. During the past two years, Army aviation units have increased in number and capability to the extent required for support of the Army's programmed force structure.

Overseas

DURING the period from 1 July 1957 to 30 June 1959, the overall proportion of Army forces overseas remained fairly constant—about 40 per cent of the total Army strength.

Deployments. The strength of the U. S. Army, Europe (USAREUR) decreased about 1 per cent. Five divisions and supporting units were maintained in the Seventh U. S. Army in Germany. One of the infantry divisions was exchanged for an armored division, giving the Seventh Army three infantry and two armored divisions, thereby providing it with a better balance of forces. Additionally, its posture for operations in nuclear combat was improved by the addition of two Field Artillery Missile Groups, Redstone, and more Honest John units. A shortage in service support units has necessitated the use of foreign nationals in numerous USAREUR logistical activities, especially in France.

By contrast, overall Army strength in the Pacific area has decreased by approximately 40 per cent since 30 June 1957. Two infantry divisions are located in Korea, and one infantry division (less one battle group) is stationed in Hawaii. At the same time, Army forces in Korea have been strengthened by the incorporation of units equipped with modern weapons capable of delivering atomic fires. Also, a Nike-Hercules battalion was deployed to Taiwan on 5 October 1958, and two Nike-Hercules battalions were organized on Okinawa from units in place. As in Europe, it has been necessary to augment the Eighth U. S. Army in Korea with indigenous personnel, both in combat as well as support units.

Army strength in Alaska and in the Caribbean was reduced to 12,100 and 6,100 respectively, as compared with 30 June 1957 strengths of 17,500 and 8,600. Two 120mm AA gun battalions in Alaska were converted to Nike-Hercules in the spring of 1959. Small forces continue to be maintained at unchanged strength in Iceland and Greenland.

Aid to Foreign Armies. Under the Military Assistance Program, the Army has furnished some \$1.6 billion worth of materiel to foreign countries over the period. NATO nations had started receiving advanced atomic-capable delivery systems by the end of the period. In June 1959, three Italian battalions were the first foreign units to become operational with Nike-Hercules. Currently, personnel from nine other nations are being trained in U. S. Army Service Schools to man Nike-Hercules units.

A significant aspect of assistance to foreign armies was the training provided throughout the Army School System. Between 1 July 1957 and 30 June 1959, a total of 16,500 officers and enlisted men from Allied countries graduated from Army courses in the United States. Army members of Military Assistance Advisory Groups and military missions are providing training assistance in 42 foreign countries.

Continental United States

STRAF and STRAC. Within the continental United States the Army maintained the Strategic Army Force (STRAF), comprised of units to provide a mobilization expansion base, a source of trained unit and packet replacements to support forces deployed overseas, and a combat-ready element designed to serve as a readily available force for use wherever needed. This last named force is the Strategic Army Corps (STRAC), established under a new Army concept of ready forces. STRAF consisted of 7 divisions, combat, and administrative support units.

AUGUST 1959



In the area of firepower, greater effectiveness has been achieved for field artillery...



...while new armored personnel carriers and helicopters add to field mobility.



Army Operations and Training

While four of these divisions were assigned to STRAC during most of the period of this report, reductions in overall Army strength required some compromise in the degree of immediate readiness of certain STRAC units. For example, it became necessary for one of the STRAC infantry divisions to accept trainees as part of its total strength and to participate in the Gyroscope program and for the armored division assigned to STRAC to be reduced to a combat command. Although these changes have had an effect upon the scale of the effort which the Army is capable of undertaking, the major capabilities of STRAF and STRAC have been retained.

The Army in Air Defense. In the light of the possibility of destructive air attacks with little or no warning upon targets in the continental United States, effective air defense has taken on a new significance. The Army has a vital share in this effort.

The Army's contribution to the overall air defense of the United States is the furnishing of surface-to-air missile defense of specific areas, such as vital military facilities and industrial, communications, and population centers. These defenses are based on a "building block" concept—composed of varying numbers of self-contained missile units—and can therefore readily be augmented as required with additional missile units.

During the period of this report, the remaining 90mm and 120mm antiaircraft gun units were phased out except for one battalion in Panama, and the Nike-Ajax missile unit program was completed. The defenses around key objectives were strengthened further when, in June 1958, Nike-Hercules missiles began to be introduced. By 30 June 1959, more than 60 Nike-Hercules firing batteries were in position. This weapon is capable of firing either a vastly improved conventional warhead or an atomic warhead. It is a highly effective missile system which can

knock down any aircraft or air-to-surface missile that flies today or that can be foreseen in the next few years.

Of importance in the air defense field has been the Army's development of the fire distribution system known as Missile Master, for the rapid collection and distribution of target information and the efficient integration of the fires of Nike batteries. One Missile Master site became operational on 5 December 1957 and the remaining sites will become operational in the near future.

Although not deployed operationally during the period, the versatile Hawk air defense missile system was completed and is planned for early introduction into the air defense systems for the Army in the field, and may, if required, be used in the air defenses of the continental United States.

Recognizing the rapidly changing nature of the air threat with the advent of the intercontinental ballistic missile, the Army has expedited the development of an antiballistic missile weapon system—the Nike-Zeus. By early 1959, various components of this system had reached the stage when their early production was considered feasible.

Reserve Components. A vital facet of the Army's activities for the performance of its mission is the maintenance of trained, ready reserve components capable of prompt provision of qualified units and individuals, either to help meet the requirements of a general war or to replace units of the STRAC when it is deployed overseas in an emergency. These requirements are met by the Army National Guard and the U. S. Army Reserve.

From a strength of 422,178 officers and enlisted men on 30 June 1957, the Army National Guard was decreased to a total of 394,329 during the following year, but has been programmed at a strength of 400,000 as of 30 June 1959. During the same period, the number of personnel assigned to units of the Army Reserve, including

personnel on 6 months active duty for training, has increased from 262,000 to a programmed total of 302,000. In addition to personnel assigned to units, the strength of the Ready Reserve—not assigned to units but available for active service—averaged 750,000 during the period. The total number of individuals immediately available from the Stand-By Reserve increased from 88,283 to approximately 510,000 during the same period. In terms of major units, the troop basis of the reserve components has remained constant, with the Army National Guard organized in 21 infantry and 6 armored divisions and the Army Reserve in 10 infantry divisions.

The primary emphasis throughout the Reserve Program has continued to be on the attainment of increasing standards of quality. Several significant steps have been taken in keeping with this goal and are described below.

Among these was the promulgation in 1957 of Army Regulations which require completion of six months training in the active Army as a prerequisite to initial enrollment in the Army National Guard. This permitted National Guard units to discontinue basic individual training and devote their efforts exclusively to unit training. The same legislation also benefited the units of the Army Reserve.

Improvements were made in the readiness status of reserve component units under the Ready Reserve STRAF Program. Selection and designation of Army National Guard units to meet revised Ready Reserve STRAF requirements were programmed for completion by 1 July 1959. Further progress was realized when, in August 1958, a new Ready Reserve Reinforcement System was put into effect. By this system, reinforcement pools were established, designed to meet early mobilization requirements of the active Army and to bring Reserve units rapidly to full strength in event of an emergency.

Another major step forward has been the reorganization of reserve compo-

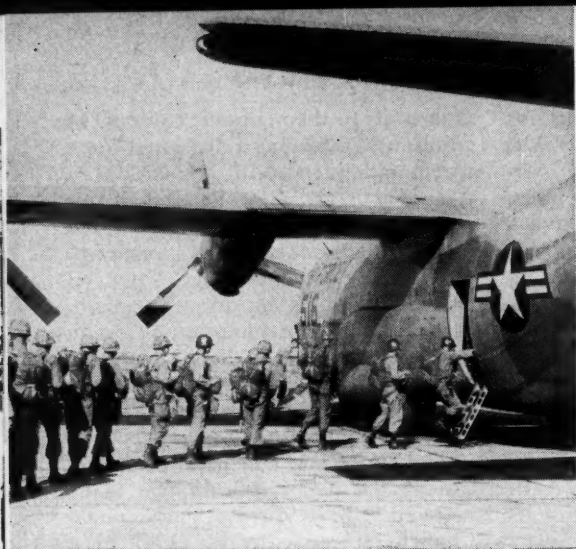
nent units to the pentomic concept. In addition to achieving a divisional structure paralleling that of the divisions of the active Army, the chief aims of this program have been to modernize the reserve nondivisional units in order to provide the numbers and types required to support approved war plans, and to develop premobilization readiness commensurate with post-mobilization missions. This reorganization was begun early in 1959 and is rapidly nearing completion.

The peacetime command and control of the Army Reserve was made more effective by the progressive establishment since September 1957 of a structure of U. S. Army Corps (Reserve); 13 of the 14 projected corps are now operational.

A further significant step in the progress of the reserve components towards unit readiness was achieved when the Secretary of the Army approved on 5 October 1958 a program of "Minimum Standards for the Status of Readiness of Reserve Component Units."

The program establishes realistic minimum standards of strength, training, and organization that must be attained by each priority of the 1960 reserve components troop structure. Three years are established as the time within which all units will be at the required minimum standard. Units are placed in the first, second, or third year of the program depending on an evaluation of the unit by the army commander. Failure to meet minimum standards; to progress from the first to the second, or second to the third year minimum standard; or once at the third year minimum standard, to maintain this standard, will be grounds for placement in a lower priority, inactivation, or loss of Federal recognition, as appropriate.

An especially noteworthy aspect of the Army National Guard's activities has been the contribution of a number of its units to the air defense of the United States. On 13 September 1958 the first Army National Guard battal-



Combat-ready Seventh Army troops board C-130 transport to help assure independence of Republic of Lebanon.

ion assumed full operational responsibility for Nike-Ajax sites previously manned by an active Army unit. Currently, units of the Army National Guard are progressing on schedule toward the goal of using on-site elements of 32 Nike-Ajax battalions in the continental United States and two Nike-Hercules battalions in Hawaii.

Beginning in 1958, the "One Army" concept received new emphasis in order to develop closer relationships between all elements of the Army, active and reserve. The impetus for this concept stemmed from the need for all members of both the active Army and its reserve components to understand fully the complementary nature of their roles and the common responsibilities of each in the Army's efforts.

In keeping with the "One Army" concept, in March 1959 the Combat Arms Regimental System was extended to include the reserve components. The sharing of parent regiments by units of the active Army and Army Reserve should further strengthen relationships between these components and their members. The National Guard will preserve and perpetuate its own historic regiments.

Little Rock. On 24 September 1957, pursuant to the Executive Order of the

President of the United States, an airborne battle group of the 101st Airborne Division was deployed by air from Fort Campbell, Kentucky, to Little Rock, Arkansas, and the Arkansas National Guard, both Army and Air, was brought into active Federal service as part of a force to enforce the order of the United States District Court for the Eastern District of Arkansas. The airborne unit was gradually reduced in size and was back in its home station by 3 January 1958. The last of the Arkansas National Guard troops were released from active duty under this call on 29 May 1958, when the Army's mission was terminated.

Operations Conducted. Demonstrations of the Army's capability to react promptly in an overseas emergency were furnished when forces were dispatched to the Caribbean area and to Lebanon. On 13 May 1958, as a result of violent anti-U. S. demonstrations in Venezuela which threatened the personal safety of the Vice President of the United States, the Joint Chiefs of Staff directed the movement of the Army forces to Puerto Rico. One hour and twenty minutes later, and only three hours after the warning order was sent, the first elements of a two-company task force of the 101st Air-

borne Division were enroute by air from Fort Campbell, Kentucky. The assembly and movement of over 1700 miles was completed exactly thirteen hours and three minutes after the Joint Chiefs of Staff issued the order.

On 16 July 1958, following an urgent request from the President of Lebanon for military assistance to maintain his nation's security and guarantee its independence, a battle group of the 24th Infantry Division began movement by air from its station in Germany to Adana, Turkey, arriving there on 17 July. On 19 July the unit was airlifted to Beirut, Lebanon. This initial deployment was followed up by sea and air shipment of additional Army combat and support units from Europe.

The Lebanon operation not only demonstrated the Army's capability to take prompt action, but illustrated the effectiveness of such action in restoring stability in troubled areas. It also emphasized the Army's dependence upon the Air Force and Navy for strategic

transport, and forcibly demonstrated the advisability of predesignating air and sealift for the movement of spearhead Army units in future emergencies.

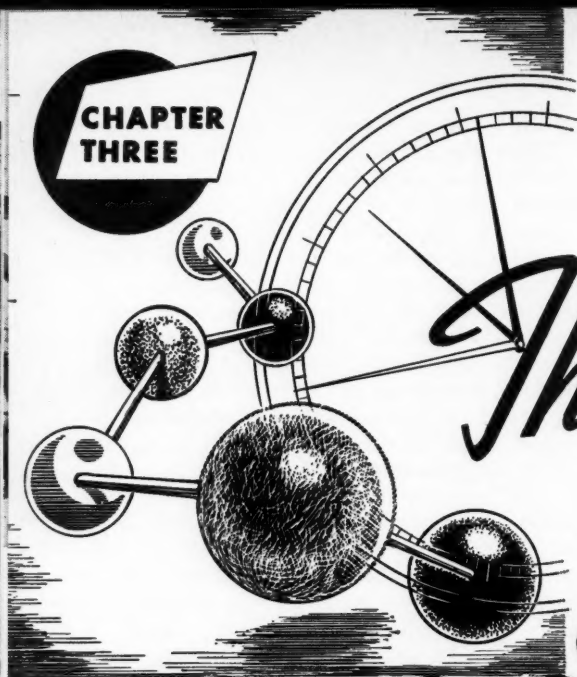
Operations of a different type occurred in connection with the attacks initiated on 23 August 1958 by the Chinese Communists against the Chinese Nationalist offshore islands. The Army had a major role in providing advice on the defense of the islands and in accelerating shipments of Military Assistance Program equipment, directed by the Department of Defense for the modernization of the Chinese Nationalist divisions deployed on the offshore islands. As previously mentioned, the Army also moved and installed a Nike-Hercules battalion on Taiwan on an emergency basis.

In summary, the Army has accomplished its major reorganization, developed sound concepts for the future battlefield, and concurrently met the many challenges of the period while maintaining a high degree of readiness with minimum resources.

In seeking strategic mobility to meet concepts of future war, Army units train at hooking up howitzer for aerial delivery by helicopter.



CHAPTER THREE



The Race for

TECHNOLOGICAL SUPERIORITY

UNDER existing world conditions, technological superiority in weapons systems for land combat and air defense is a vital part of our Nation's defense effort. The greatly outnumbered Army troops facing the powerful Communist forces in Europe and Asia, together with those units in the United States which are available to go to their aid or respond to emergencies elsewhere, must be equipped with the best weapons our country can provide. Qualitative and technical superiority of United States Army forces is clearly mandatory—the alternative could mean dangerous military inferiority. The Army keeps apace in this vital race with its Research and Development Program.

The progress of Army research and development has been influenced by the impact of the national budget, technological progress, and Soviet

scientific accomplishments. However, certain significant considerations have remained constant, providing the primary guidance for Army research and development activities. Among these were the obvious fact that all future hostilities will be conducted under the threat or the use of nuclear weapons; and the need to provide the Army with weapons and equipment which will be applicable throughout the spectrum of the military threat.

While these considerations are accepted within the Army, they have not always been fully recognized elsewhere; therefore, valid Army research and development objectives have sometimes been curtailed by the austerity of the budget or by lack of recognition of the urgent national need for improved capabilities for land combat and air defense.

Throughout the period, the Army

exploited scientific and technological advances in accordance with national and Department of Defense long-range objectives. With goals ranging in time from the immediate future up to the 1970 period, the Army explored many feasible ways to achieve increased firepower, lighter weight weapons and equipment, simplified operations and logistics, and more efficient utilization of manpower and materiel. Considerable success was achieved in attaining qualitative technical superiority for Army equipment, relative to that which may be available to a potential enemy.

Further, the Army actively participated in efforts directed toward inter-allied standardization of weapons and equipment, and in programs which assist our allies in their research and development efforts. These measures advance the defensive capabilities of the Free World.

Firepower

Conventional Weapons. Notable progress has been made in improving the offensive and defensive effectiveness of the individual soldier. A significant advance in improving the battle effectiveness of the individual soldier and small units was made with the standardization of a new family of small arms. These weapons include a new rifle and an all-purpose machine gun. Availability of these weapons can make possible the reduction of the numbers of types of small arms in the Army from eight to four. Further, they employ a lighter, shorter cartridge, standardized by NATO. This makes possible marked simplification of small arms ammunition supply, particularly when the Army is operating with allied forces. By the end of the period, production of these weapons and ammunition had begun on a limited basis.

Development was completed on a significantly improved hand grenade, the antipersonnel weapon Claymore, an improved antipersonnel mine, and a shoulder-fired 90mm recoilless rifle. Development neared completion on a

shoulder-fired antipersonnel grenade and an extremely lightweight antitank rocket grenade. Medium and heavy mortars also are being developed which will be lighter than current mortars. Development of a 120mm recoilless rifle has been initiated.

In the field of armor, the M60 tank was type-classified in March 1959, thereby promising the Army a more effective main battle tank. Mounting a 105mm gun, it will be capable of defeating any known tank on the battlefield. Development has been initiated on a radically different and lighter weight Combat Vehicle Weapon System to be the main armament for both the future main battle tank and an Armored Reconnaissance/Airborne Assault Vehicle, with the latter, in time, replacing the current light tank and airborne assault weapon.

Greater effectiveness has been achieved for field artillery cannon, with increases of approximately 30 per cent in range achieved in the new 105mm and armored self-propelled 155mm howitzers. Weight has been reduced in the new, armored self-propelled 105mm howitzer, now completing service test, and the armored, self-propelled 155mm howitzer, making both weapons airtransportable. Additionally, the former can swim in inland waters.

The new self-propelled 175mm gun, also completing service test, is 40 per cent lighter than previous comparable weapons, and outranges current counter-battery cannon by 30 per cent. A lighter weight, self-propelled carriage mounting the standard 8-inch howitzer is nearing test completion and will provide greater mobility for this heavy howitzer, more rapid emplacement, and improved flexibility in delivery of fires. Ammunition of greater lethality and destructiveness is being provided these weapons. Fire direction, survey, and other ancillary equipment is being developed, which will further increase the effectiveness of artillery fire.

Developments in the field of chemical warfare have provided the Army

The Race for Technological Superiority

with chemical agents of improved characteristics. Delivery systems include all calibers of artillery cannon, large caliber free rockets, and a toxic rocket designed specifically for this purpose and fired from a lightweight multiple launcher.

Surface-to-Air Missiles. The Nike-Zeus research and development program continued at an optimum rate, pointing the way toward an effective antiballistic missile defense for the United States. However, available funds did not permit the initiation of production of this weapon system, although the development of certain components has progressed to the point where they could be committed to production at any time.

Nike-Hercules full-scale industrial production began in July 1957. This is the world's first operationally deployed surface-to-air weapons system possessing an atomic capability. With a range of over 75 miles, it is capable of intercepting any known manned bomber or air-breathing missile. It has destroyed target drones flying at two to three times the speed of sound at altitudes of 60 to 70 thousand feet. An active improvement program is being pursued to keep the Nike-Hercules system abreast of the post-1960 threat.

Hawk, which will become operational later in 1959, is specifically designed to engage very low altitude targets. Hawk has successfully engaged a drone target as low as 55 feet above the ground, and has scored a direct hit on a 1400-mile-an-hour target missile at an altitude of six miles.

A new shoulder-fired weapon is under development, designed to provide air defense against low-level attack for forward deployed combat units. This weapon utilizes a bazooka-type guided missile.

Development of Missile Monitor also neared completion during the period of this report. A mobile, electronic system for control and coordination of air defense missile batteries in the

field army, it increases the overall effectiveness of Hawk and Hercules batteries integrated into one defensive system in the same manner as does Missile Master at fixed sites in the continental United States.

Surface-to-Surface Missiles. In the field of surface-to-surface missiles, the Army needs modern weapons systems which possess capabilities extending from the precise, short-range attack of small, hard targets—such as tanks—to that needed to cover the greatly increased areas of the modern battlefield.

Existing Army weapons of this type—the Corporal missile and the Honest John free rocket—have recently been joined by the Redstone, which became operational in June 1958, with a range capability of approximately 200 miles. An immediate antitank guided missile capability was provided by the limited procurement of the French Missile SS-10, which permitted terminating the Dart development program, and released R&D funds for other purposes. Although the foregoing systems provide a portion of the missile fire support required for ground combat operations, they are only interim first generation weapons.

The research and development effort continues to emphasize the provision of modernized missile systems that will be lighter, more mobile, more accurate, and more reliable; that will use simpler guidance systems and control techniques; and with markedly improved capabilities for around-the-clock, all-weather fire support.

The first of the new systems to take the field in the near future will be Lacrosse, a highly accurate weapon capable of providing front-line units with close fire support, using both atomic and non-atomic warheads. As in the case of all current developmental missiles, it will use a solid propellant which greatly improves the ease of field handling and reduces the logistical burden.

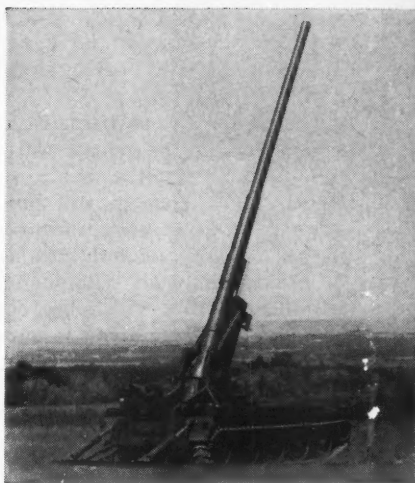
Exemplifying the Army's trend toward greater mobility, a version of Little John—a man-transportable free rocket of the Honest John family—is now in the hands of the 101st Airborne Division. Much smaller than Honest John, it provides the significant firepower so valuable to small, mobile combat teams on future battlefields.

Sergeant, an all-inertial guidance, solid-propellant system, will replace the command-guided, liquid-propellant Corporal. It will afford many improvements in the vital areas of mobility, field-handling, invulnerability to electronic countermeasures, accuracy, and reliability. To date, the Sergeant firing test program has met with outstanding success.

The Pershing program, initiated in January 1958, had the purpose of developing a lighter, longer range, more mobile system to replace the Redstone. In contrast to the Redstone's liquid propulsion system, it uses solid propellants. A field army weapon, it will be transportable by aircraft and helicopters.

Jupiter, the highly successful 1500-mile IRBM system initiated by the Army in 1955—and subsequently assigned to the Air Force for operational responsibility—was developed to operational readiness in three years. After the difficult nose-cone reentry problem was solved by the Army in August 1957 and full-scale firings in 1958 quickly demonstrated the system's overall operability, troops were trained and hardware made available for deployment in December 1958 of the initial increment of the first Air Force Jupiter squadron. During 1957-58, the Jupiter was reoriented from the Army mobile concept to a fixed-base concept in order to satisfy Air Force operational requirements.

Space Projects. In early October 1957, when Sputnik I was placed into orbit by the USSR, the Army was ready to compete in the space race with the Jupiter-C missile. In early November



"The new self-propelled 175mm gun . . . is lighter and outranges current counter battery cannon." New 8-inch howitzer appears below.



of that year, the Army was directed to place a satellite in orbit without delay. Eighty-four days later, on 31 January 1958, the Army successfully placed Explorer I in space.

With this auspicious beginning, two more Explorers were placed in orbit, providing the United States with basic tools for the measurement of radiation and other phenomena around the earth. In December 1958, the Army's Pioneer III sampled this radiation to a distance of 67,000 miles from the earth's surface and further defined the radiation bands which surround the

The Race for Technological Superiority

earth. Finally, in March 1959, Pioneer IV passed the moon and went into a perpetual 394-day orbit around the sun.

The Army also participated in scientific satellite development and successfully developed the solar batteries which it is estimated will power the Vanguard sphere beacon for a century or more. The communications package and radio relay equipment in the SCORE satellite which broadcast the President's 1958 Christmas message to the world were developed by the Army, as was the meteorological cloud cover equipment contained in the 20-inch sphere Vanguard firing.

By its contribution to space science since November 1957, the Army has consistently contributed to the Nation's scientific technological advancement, as well as having pioneered in certain military applications of space technology. Currently, the Army is developing a 1½-million pound thrust space vehicle booster for the Advanced Research Projects Agency (ARPA) of the Department of Defense; it will provide a number of scientific satellite launching vehicles to the National Aeronautical and Space Administration (NASA); and it will test 10 NASA space capsules through the ballistic trajectories of the Redstone and the Jupiter, in support of Project Mercury.

Mobility

Air Mobility. Much progress has been made in the development of aircraft and associated equipment for the Army. Among the aircraft which have been developed is the Iroquois, the first turbine-powered helicopter developed in the United States. For a normal mission, it can carry a payload of 800 to 1000 pounds at a cruising speed of 100 knots. Already in production, it is now being issued to troop units.

The Caribou 3-ton short take-off and landing (STOL) airplane has been constructed and successfully flight tested. This is the first airplane pur-

chased by the Army exceeding the 5,000-pound empty weight limitation imposed on Army aircraft. Special permission was obtained from the Secretary of Defense for its procurement.

Early in 1957, permission also was obtained from the Secretary of Defense to build the Mohawk. This aircraft has since been placed in production, and its first flight was made in April 1959. The Mohawk is a STOL observation aircraft, specifically designed to carry electronic combat surveillance-target acquisition gear to support the long-range weapons assigned to the field army. Its characteristics include a top speed of 275 knots, a cruising speed of 220 knots, and a payload of 1,000 pounds.

Research aircraft have been constructed and tested in order to determine the optimum high lift means to be employed in future air vehicles. Army research aircraft utilizing tilting wings, rotatable ducted fans, deflected slipstream systems, and tilting rotors have all been flown successfully.

Progress also has been made in an area which conceivably could result in replacement of some ground vehicles—that is, the Aerial Platform Test Bed Program—popularly known as the “aerial jeep.” Initial flight testings were completed on one research vehicle design and begun on two others. Based on test results, actual prototype development should begin in FY 61 or FY 62.

Considerable progress has been made in the field of air mobility, but significant problems remain—notably how best to obtain the vertical take-off and landing capability (VTOL); how to improve security and reduce noise; and how to improve maintenance and operational availability of aircraft.

Ground Mobility. Early in 1959, a new armored personnel carrier was type-classified as standard. This vehicle has a capacity of thirteen men, is airtransportable, and can swim in inland waters. It can be modified for

use as a mortar carrier, command post, or communications center. Additionally, design of a smaller armored carrier was begun, with similar portability and swimming characteristics. This vehicle is intended primarily for command and reconnaissance uses, and will be capable of mounting the heavy antitank weapon. During this same period, prototypes of the GOER series of logistical vehicles were constructed and testing started. These vehicles are based on the proven design principles of heavy, large-wheel, commercial earth-moving equipment.

Testing or development was commenced on a number of different types of improved conventional trucks ranging in size from $\frac{3}{4}$ -ton, 6x6, to 5-ton, 8x8 vehicles.

Development in the field of compression-ignition and gas turbine engines for tank and automotive application was also initiated as part of an overall effort to improve fuel economy, performance, and maintenance requirements.

A significant logistical development during the period has been the conversion from package distribution of petroleum products to bulk distribution direct to using units and equipment. A conversion kit will permit the rapid adaption of cargo vehicles into bulk petroleum carriers, and the bulk Class III supply point will largely replace the package Class III supply point used in World War II and Korea. Still another new concept is the Rolling Fluid Transporter, consisting of oversize tires which are fluid containers, mounted on a simple trailer. This item has been type-classified for limited production.

Water Mobility. In early 1959, tests were initiated on a prototype of a Beach Discharge Lighter to unload roll-on, roll-off ships over undeveloped beaches. During this same period, construction was initiated on a 5-ton Amphibious Lighter to be used in logistical over-the-shore operations.

Nike-Hercules, right, provides air defense against high flying aircraft, while new Hawk meets threat of tree-top level attack.



Communications-Electronics

Communications. To meet the requirements of the modern battlefield for communications of greatly increased capacity, range, flexibility, and reliability, an area communications system has been adopted, utilizing radio relay as the primary means of interconnecting dispersed command posts. Signal equipment is being installed in mobile shelters which can be transported by truck or helicopter and placed rapidly in operation after arrival on site. Smaller, more reliable, and more flexible equipment is under development, including automatic switching

The Race for Technological Superiority

devices, high-capacity cable which can be laid by air, and a variety of radio relay sets.

Development has been completed on a new series of tactical radios, providing significantly increased capabilities together with greatly reduced size. The sets are under test, and standardization is expected shortly.

A continuing problem is the vulnerability of communications systems to interception, analysis, and jamming. Still further reductions in the size, weight, and power requirements of communications-electronic equipment are essential. An intensive effort in microminiaturization is being directed toward this goal.

Battlefield Surveillance. Exploitation of the potential firepower of the Army's weapons is dependent upon the ability to detect and locate suitable targets with sufficient accuracy to permit effective fire. However, the goal for combat surveillance and target acquisition is to insure continuous, all-weather, day-and-night watch over the battle area in order to provide timely information for tactical ground operations in addition to providing target data. The Army has achieved a limited capability for meeting this goal with equipment now being issued to troops, including ground surveillance radars for detection of moving vehicles and personnel; aircraft equipped with side-looking radars for detection of moving vehicles; and a drone system which provides surveillance by aerial photography. Specific systems are under high priority development for accurate radar location of mortar and artillery sites, and for precise location of ground targets by Army aircraft.

Nuclear Research and Development

Small Atomic Weapons Systems. The current interim atomic weapons systems of the Army are, in many instances, well on their way toward ob-

solescence without ever having been fired in anger. This is because of their relative complexity, size, and weight, as well as the high yields of their warheads—which is small only relative to the megaton yields of the so-called "strategic weapons." Hence, the Army has pressed forward with an urgent requirement for the very small, close-range atomic weapons with yields in the order of tons, rather than kilotons. These are essential for use in close proximity to friendly forces with little or no danger and without causing unwarranted damage in any friendly homeland the Army may have to fight to save. Advances in nuclear technology made during the period have given a clear promise that this requirement can be met in the early future.

Meanwhile, the completed development of the 8-inch atomic artillery shell will provide commanders with greatly increased firepower from reliable, accurate, and readily available forward delivery systems, widely distributed throughout divisions and corps.

Availability of the 8-inch howitzer in the ground forces of allies is also of significance, as any enemy commander must now consider every 8-inch howitzer as a possible source of atomic fire.

Nuclear Power Applications. Over the period, the Army has broadened its program to provide a family of nuclear power plants for supplying heat and electricity for the remote, isolated installations of all three military services. A prototype—the Army Package Power Reactor, a 2,000 kilowatt, pressurized water type—has undergone extensive operations for test purposes and to acquire operating and developmental data. Having shown much promise, a field version of this power plant is now under construction.

Additionally, programs have been undertaken for developing nuclear-propelled special land vehicles. An example is the Army Overland Train, a concept particularly suited for bulk logistic operations, especially in Arctic

areas. Under Army sponsorship, the Atomic Energy Commission was requested in June 1958 to initiate development of an advanced, compact reactor suitable for propulsion of such vehicles.

Major logistical improvements are contemplated by the construction of a prototype plant for irradiated food—planned to begin in mid-1959. Significant possibilities could result from prolonging food storage life, and reducing packaging and refrigeration requirements by this means.

Human Research

THE increased tempo of land combat requires soldiers with an aptitude for combat, an ability to withstand stresses unknown in past wars, and a wide variety of technical skills. Army research and development activity to improve the quality and performance of the American soldier has been accelerated during the past two years, to keep pace with and anticipate the qualitative personnel requirements of a nuclear and space-age Army.

A new type Combat Aptitude Test was placed in use in 1958. Also, a broad program was initiated to improve the selection and training of personnel in the electronics, aviation, and fire control fields, with the objectives of gaining marked reductions in training times and attrition. A new concept of rifle marksmanship training, Trainfire, was also adopted.

An improved program, now under consideration, will reduce advanced individual armor training from eight to six weeks. In numerous other fields, exploration of various avenues of human research is progressing toward the goal of an Army trained in minimum time in all matters essential to combat.

Modern weapons systems have become so costly and lethal that it is often no longer feasible or economical to use operational equipment for training. Consequently, the Army has turned increasingly to the use of simulators and sophisticated training de-

vices which require the crews to perform all operations that would be necessary in combat. For example, a synthetic device has been developed to simulate the Redstone missile and its operations. This permits effective, economical, operational training which would not be available otherwise.

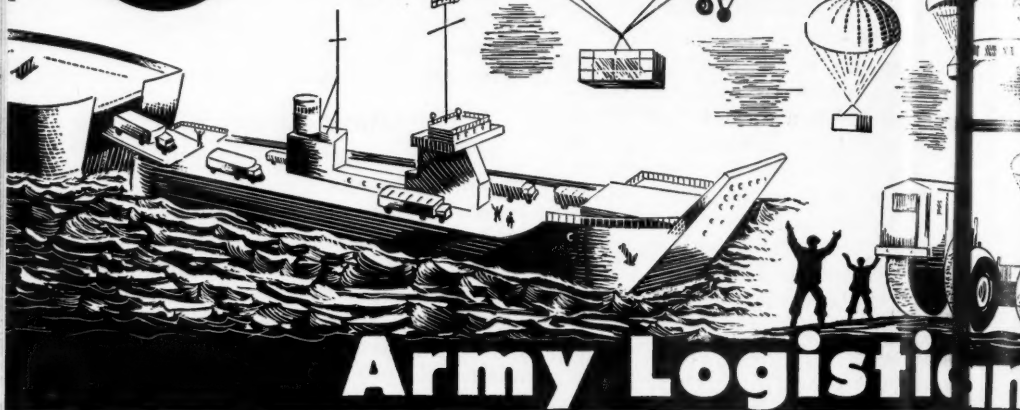
Operations Research

THE comparatively new science of operations research has become widely recognized as a valuable tool in the analysis and evaluation of modern military organizations—their possible weapons systems, logistics, and tactics. Significant progress also has been made during the period in the development of advanced methods of war gaming as an analytical tool, to include development of techniques and methods for using high-speed electronic computers for data handling.

In the race for technological superiority, the Army's Research and Development Program has made significant strides forward by exploiting—within the limits of available funds—the opportunities presented by our expanding national technology and scientific attainments. In so doing, it has also made major contributions toward broadening the knowledge and capabilities of the Nation's scientific and engineering communities, as well as man's knowledge of space.

The products of this program have clearly indicated new dimensions in firepower, mobility, and communications—as well as new ways to develop better trained personnel—which the Army should be able to utilize. However, prototype weapons and equipment do not provide a capability in the hands of troops, but represent only potential. The Army has not obtained maximum benefit from the fruits of technology because of the continuing small share of the Defense budget afforded for procurement of the new weapons and equipment which have been developed.

CHAPTER FOUR



Army Logistics Modern Management

AN indispensable ingredient in the Army's ability to accomplish its missions and tasks on a global basis is a logistics system capable of providing rapid and effective support to Army forces engaged in any of the wide variety of operations which may be required to meet the current threat. Such a system must take full advantage of decentralized and dispersed operations without losing responsiveness; it must place proper emphasis on the modernization of our strategic stockpile of supplies and equipment; and it must keep pace with fast-moving combat elements without being crushed by the weight of its own support requirements. For the predictable future, the Army's logistic system must also be capable of supporting both nuclear and non-nuclear combat operations.

The sufficiency and effectiveness of the Army's logistics support organization have a direct impact upon the Army's capability to maintain both its forces overseas and the readily available strategic forces in the United

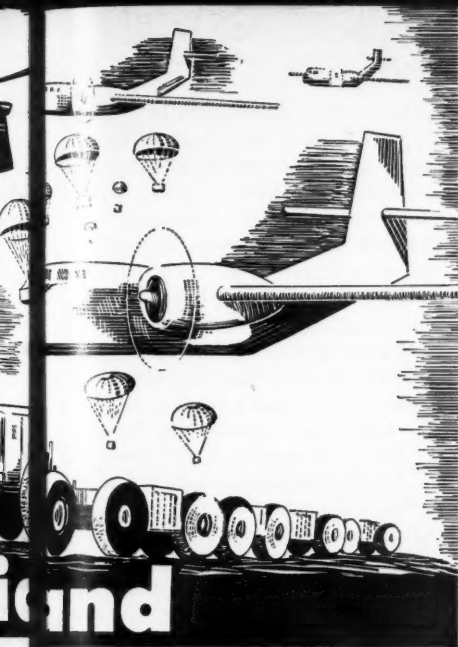
States, to equip air defense units at home and abroad; and to support both our reserve components and the active units of our allies.

Expediting Supply

DURING the period of this report, a continuing effort has been made to make the Army supply system less vulnerable, more efficient, and less complicated. Progress has been made in reducing the number of items, in elimination of nonessential items, and in reducing the weight of supplies, particularly in those stocked in forward areas. New equipment such as the roll-on, roll-off ships, overland trains and flying cranes also give promise of improvements in expediting supply.

Simplification of the Supply System

In modern warfare only those items which contribute directly to success in battle can be supported. The Army's supply system is being simplified by the elimination of nonessential items to the maximum practicable extent.



items for Nike have entered the supply system. The Army also is continually screening and evaluating the parts presently in its supply system with the view to reduction to sound, minimum levels.

In order to supply seldom used repair parts when urgently required, a "controlled cannibalization" system has been adopted, whereby serviceable components are removed from uneconomically repairable items.

Modernization

DURING the period, the Army developed and adopted a Five Year Modernization Program for the twofold purpose of advising higher authority of its specific minimum equipment modernization requirements and guiding Army budgetary, maintenance and procurement efforts.

The highest priority objectives of this program are to: (1) provide replacement with modern items of those lost each year through the combined factors of consumption in training, wear-out, and technological obsolescence; (2) make continued payment of certain fixed costs such as industrial mobilization and first destination transportation; and (3) provide over the five year period an annual build-up increment of modern equipment which will allow an orderly increase in the level of the Army's inventory to that required to equip the active Army and high priority reserve component units while providing a mobilization reserve of modern equipment to sustain combat in the initial phases of war.

The Army has been reorganized and trained to fight in the atomic age. Implementation of this program will provide the modern equipment for these reorganized divisions.

Notwithstanding the urgency of the need to achieve the minimum objectives of this program, the Army has lost ground in many areas of its efforts to modernize and to overcome growing equipment obsolescence.

The shortage of funds for Army

Equipment not in daily use is pooled at higher echelons to the rear. By such means, combat units are not encumbered with rarely needed items but are assured of immediate support when required. Forward stockage is reduced by: (1) maintaining small stocks of carefully selected, fast moving items at organization level; (2) holding less frequently needed items in rear areas; (3) reducing depot stocks to levels necessary to carry out the assigned mission; and (4) reducing the number of special purpose items.

The supply and maintenance problems of the Army are being reduced by standardization of materiel, standardization of practices and procedures, maintenance evaluation prior to production and by improved repair parts provisioning for new equipment. As an example, the Nike missile system contains about 1.5 million parts, yet by using the unit replacement principle—that is, replacing units containing thousands of parts rather than replacing individual parts—only 11,500 line

Army Logistics and Modern Management

modernization has not only precluded the build-up of the Army inventory to the level required to meet the stated highest priority objectives, but has proven inadequate to replace annual losses which have accrued because of consumption in training, wearout, and obsolescence.

Under the conditions described, the procurement policy of the Army has continued to accord priority to those new items which can markedly increase combat effectiveness, as well as provide essential dual capabilities for the support of either nuclear or non-nuclear operations.

There has been a large increase in the quantities of guided missiles, air craft and electronics and communications equipment in the Army supply system. For example, the dollar value of this equipment has risen \$500 million from FY 1958 to FY 1959—a 20 per cent increase in one year—with a corresponding increase in the requirement for maintenance and overhaul of such materiel. For guided missiles and aircraft, the parts requirement alone has risen over 45 per cent. These requirements were partially satisfied by deferring the overhaul of other equipment, as mentioned earlier.

A significant change in maintenance overhaul has been implemented. The Army is now employing a technique of "Inspect, Repair Only As Necessary" (IROAN) in lieu of complete equipment disassembly and reassembly or rebuild. This change in operating procedure is designed to obtain more combat serviceable equipment for less maintenance money. However, approximately twelve more months of operation under this concept will be required to determine the definite amount of savings realized.

Facilities

ARMY inventories are checked continuously to determine whether items capable of being produced in Army-owned standby plants have become obsolescent in the light of new develop-

ments. If such is the case, the plant is considered for conversion to production of a new item or of older, still usable items for which there is a shortage of capability. If not suitable for either of these purposes, the plant is declared excess. Since early 1957 the Army has declared 24 of its production facilities excess. Whenever possible, idle plants required for mobilization purposes, or excess plants, are leased in whole or in part to private industry, thus eliminating or reducing the cost to the Army of maintaining the plant while retaining the benefit derived by the local economy through continued operation.

The amount of funds available for the management and maintenance of the physical plant of the Army has fallen \$24 million from FY 1957 to FY 1959. In keeping with this reduction, the number of depots, ports, arsenals, and other Class II installations has been reduced from 122 to 98 during the past two years.

It has not been possible to make as great a reduction in the number of Class I installations used in the training base and by tactical forces. Requirements for the continued operation and maintenance of these installations, even at austere levels, have increased the backlog of deferred maintenance of other installations to \$114 million in FY 1959. Hence, the Army's overall physical plant has deteriorated to some degree since higher priority demands prevent funds being made available for all required maintenance.

Military Construction

ARMY construction activities during the past two years have been focused on providing urgently needed facilities. Although the period was marked by some stop and go activity resulting from expenditure limitations, provision was made to meet increasing requirements for air defense and other missile support. Military construction for the active Army totaled approximately \$655 million—\$620 million for

the Army's Military Construction Program and \$35 million for research and development facilities and industrial construction.

More than 40 per cent of the overall construction program was devoted to air defense installations in the United States and overseas. Emphasis also was placed on meeting construction requirements for operational training and research and development facilities, as well as housing requirements for normal Army operations. The latter includes improved barracks and bachelor officers' quarters. Adequate on-post housing for military families has also been considerably improved, as is discussed in detail in Chapter V, "Personnel and Improved Professionalism."

During the past two years new construction in support of the Army's reserve components has totaled over \$76 million, representing the initiation of 255 National Guard and 205 Army Reserve construction projects.

Battlefield Logistical Mobility

IF the Army is to obtain the degree of mobility which will permit an armored division, as an example, to move and fight and then move and fight again without resupply or maintenance, it must not only obtain highly mobile equipment, but must also establish a major downward trend in spare part, POL, and other tonnage requirements. This can be accomplished by scientific improvements of our equipment for greater reliability, by simplification of equipment for ease of maintenance, by greater power output per weight of fuel consumed and by austerity.

The handling of fuel and petroleum products is a major part of the logistics workload and requirements for these products are increasing. To partially offset the requirement for fuel, the Army is developing a multi-fuel engine, an improved fuel/power plant which operates on a variety of fuels, has lower consumption rate, meets

vehicle performance requirements.

Ammunition is the next highest tonnage item. The increased lethality per unit of weight afforded by both atomic and radically-improved non-atomic munitions may allow marked reductions.

With regard to other major bulk items, food tonnages are being reduced through dehydration and irradiation processes. Construction material tonnages are being lessened by requiring STOL-VTOL characteristics for Army aircraft; improved mobility and lighter weight for transport vehicles, resulting in decreased bridge construction and road maintenance; and reduced stockage of supplies throughout the logistics systems. Effort is being directed toward simplifying and perfecting equipment to the point where longer hours of operation are possible without maintenance attention. In keeping with the concept of "mobility through austerity," the present logistical organization of the Army is under continuous review and revision, and is being streamlined wherever possible.

Management

THROUGHOUT the period, a number of actions have been undertaken to improve the effectiveness of Army management. Such improvements have reduced costs, saved manpower, simplified procedures, improved organizational structures, and increased productivity in the face of ever-increasing costs. The reduction in overhead costs helped to make more resources available for combat units and assisted the Army in its efforts to live within its budget.

The use of computers for many of the Army's business-type data processing activities has brought major improvements in management effectiveness and accompanying savings in resources. Increased speed and accuracy have been achieved by the introduction of automatic data processing systems into Army management and control processes, as well as marked improvements in reaction times.

Army Logistics and Modern Management

Supply Management. The goal of the Army Supply System is improved logistical support with minimum forward stockage. Based on tests conducted during the period, a number of steps have been taken toward this goal. A data transceiver network has been installed to connect all major supply activities in the continental United States with all major overseas areas. An intra-theater network is operating in Europe and has recently been completed in the Pacific. High speed data-processing equipment has been installed in Hawaii and in the Seventh U. S. Army, and is planned for installation in USAREUR theater inventory control points by the end of FY 1961.

Many items which must be available in the system need to be stocked only at theater depot or CONUS depot level. Under this concept, only those items meeting selective stockage criteria based on actual demand experience rather than issue experience, are allowed to be stocked at each supply echelon. This has permitted a reduction of more than 50 per cent in line item stockage in continental United States stations, and in the Seventh U. S. Army in Europe.

Because of the elimination of excess and obsolete materiel from the depot system and improvements in inventory management, more storage space is becoming available. In the continental United States stockage is being consolidated and placed in permanent-type construction, and sub-standard facilities are being inactivated or eliminated. During the past two years this process has resulted in the reduction of the number of depots from 48 to 44.

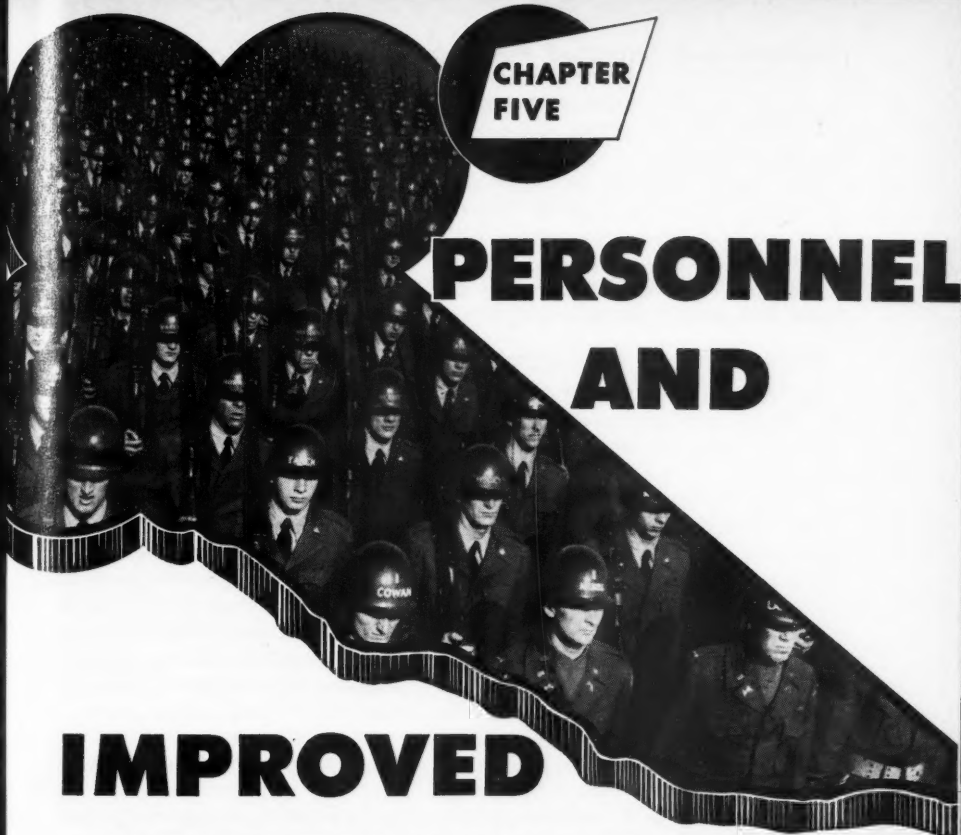
In keeping with the reduction in Army strength, the Army logistical bases in Japan, Hawaii, and Alaska have been reduced, and their support missions adjusted accordingly. Large quantities of supplies have been and are being disposed of in an orderly, economical manner, much of the total going to the Military Assistance Pro-

gram. Emphasis continues to be placed on this disposal program.

Command Management. The Army has continued to decentralize the management of its resources at all levels. This action recognizes the fact that, to be successful, good management (1) must exist at every level and (2) requires the closest possible relationship between missions and resources. In order to accomplish this Army-wide decentralization, suitable training programs have been included in the courses of Army Service Schools. In addition, at the Army Management School short, intensive courses in Army management methods were given to senior military and civilian personnel. During this period the Army also continued its program of assigning officers to graduate training in business administration at civilian institutions.

Efforts toward better management have resulted in the institution of the Army Management Improvement Program—a many-sided effort to seek out and put into practical use improved ways of conducting the Army's activities in a more efficient, economical manner. This program also emphasizes Army-wide dissemination of the improvements initiated by one command or major activity which have proved beneficial from a management standpoint.

In the fields of logistics and management, the Army satisfied many demanding requirements during the period of this report, despite steadily rising costs in all areas of maintenance and operations, but had to accept a growing backlog of deferred maintenance of facilities. However, the need to improve the rate of equipment modernization of the Army remains one of the most serious of the Army's problems, affecting both current combat effectiveness of the active Army and the potential combat effectiveness of the Army National Guard and Army Reserve, should they be called to active service.



CHAPTER FIVE

PERSONNEL AND

IMPROVED PROFESSIONALISM

THE increasing complexities of modern equipment, the destructiveness of modern weapons, and the resulting intensified demands of the battlefield environment have not altered the fact that, more than ever before, *man* is the key element in applying effective military force. Indeed, these developments underscore the need for a skilled, highly trained, strongly motivated force. The Army's ability to accomplish either its wartime missions or its peacetime deterrent tasks depends on the development and retention of a truly professional force, both military and civilian.

Strengths. During the past two years, the Army's military personnel strength

declined by 127,079—from 997,079 on 30 June 1957 to a programmed strength of 870,000 on 30 June 1959, representing a two year decline of 12.7 per cent. It should be noted, however, that for the foreseeable future, this downward trend has been arrested, and a period of stabilized Army personnel strength appears likely. However, the austere manning levels imposed by the strength ceiling of 870,000 are cause for serious concern on the part of the responsible leaders of the Army.

While the uniformed strength of the Army was being thus reduced, the number of the Army's civilian work force also declined from 429,217 direct-hire employees to approximately 408,000 and the number of foreign nationals

Personnel and Improved Professionalism

employed under contract hire in overseas areas dropped from 170,377 to 121,900.

Continued decreases in Army personnel strength, with no proportionate decrease in Army commitments, have required a continuing critical review of all manpower allocations to both existing and new projects.

Army Enlisted Management

RECOGNIZING the need for a stable, skilled, strongly motivated force of enlisted men and women supervised and directed by a corps of professional noncommissioned officers, the Army during the past two years has built its personnel program for enlisted personnel around efforts to increase the effectiveness of recruiting, to screen and evaluate carefully all its manpower, and to provide the environment which will stimulate the retention of the better qualified individuals.

Recruiting Progress. Enlistment of more than 110,000 non-prior service personnel in FY 1959 has been particularly satisfactory when compared with enlistments of 68,000 in FY 1957 and 78,000 in FY 1958. Contributing factors to this improvement are the selection and training of the recruiters, improvements in Army prestige and in Service attractiveness. Reenlistment gains since FY 1958 have been less pronounced, with the rate for all Regular Army men eligible increasing from just under 50 per cent to slightly more than that percentage.

Enlisted Management Program. In order to assure a high quality input, to utilize the talents of enlisted men and women to better advantage, and to provide conditions of improved career attractiveness, in 1958 the Army adopted its Enlisted Management Program. Key elements of the Program are the Enlisted Evaluation System, the Promotion Qualification Score, a promotion plan for grades E-8 and E-9, permanent promotions, centralized assign-

ment policies for grades E-8 and E-9, and preinduction aptitude screening. Further elements will be added as need becomes evident.

At the heart of the program is the Enlisted Evaluation System. By the end of 1959, approximately 185 tests will have been administered to 128,000 personnel in 84 Military Occupational Specialties to determine qualification for proficiency pay. A plan for basing promotion eligibility above the grade of E-4 on a Promotion Qualification Score is in the process of development. Through the establishment of cut-off scores, the plan would assure that promotions go only to qualified noncommissioned officers and specialists. In this connection, promotions to E-8 and E-9 are proceeding at the programmed rate. By 30 June 1959 the Army had approximately 2,500 E-8s and 800 E-9s. The first promotions to E-9 began on 1 April 1959.

In another aspect of the Enlisted Management Program, for the first time in eight years permanent enlisted promotions are being made. Such promotions give recognition and add stability to the status of the professional noncommissioned officer or specialist.

Assignment procedures have also been improved. For E-8s and E-9s, the Army now has in effect a system of centralized control and name assignment which is very similar to the method used for officers. This not only gives added prestige to these noncommissioned officers but also helps the Army to obtain the most effective utilization of their special abilities and skills.

Enlisted personnel of grades E-7 and below will continue to be assigned through an automatic distribution system. Within the system, however, many new procedures are being initiated to individualize their assignment. For example, most overseas returnees now receive their assignments prior to departure from overseas commands, and many overseas-based personnel are given individual port calls, thereby

eliminating delays at the various ports of embarkation.

Job Performance Potential Program.

Prior to the inauguration of the Enlisted Management Program, in July 1957 the Army began the elimination of personnel deficient in aptitude for military training. As a result of directed reductions in strength, this program enabled the Army to discharge over 77,000 low aptitude soldiers during Fiscal Years 1958-59. This program was suspended when the Congress amended the Selective Service Act in 1958, making it possible for the Army to reject for induction or enlistment low aptitude personnel who would be unable to meet performance standards.

Preliminary assessments of the combined results of these actions indicate that substantive benefits have accrued to the Army, particularly in the disciplinary and behavior fields. By the end of the period it was possible to close three of the five disciplinary barracks active on 1 July 1957—with a fourth scheduled to close later in 1959—and there had been a notable reduction in the incident and general court-martial rates.

In general, the quality of enlisted personnel in the Army improved significantly during the period of this report, representing the culmination of several legislative and administrative projects which have been in the process of development for some time.

Officer Careers

THE Army's efforts to develop greater professionalism among its Officer Corps was undertaken along three parallel lines—(1) higher standards of retention and promotion to insure that only the best officers are retained and advanced; (2) improvements in career attractiveness designed to encourage the best individuals available to make the Army a career; and (3) educational opportunities for better development of the potential of Service personnel.

Promotions. Continued selection for promotion of truly outstanding officers ahead of their contemporaries insures full utilization of their talents by the Army. Fifteen per cent of the officers selected for the grade of colonel and ten per cent of the officers selected for the grades of lieutenant colonel and major were chosen from below the primary zones of consideration because of their exceptional individual records of accomplishment and their indicated potential.

The "best qualified" system of selection for temporary and permanent promotion was extended to the grades of lieutenant colonel and major. Adoption of this method of selection provides an increased degree of selectivity and competition for promotion to these grades. Stemming from this action, policies concerning promotion pass-over have been revised in order to retain on active duty reserve officers considered fully qualified for promotion but not selected within the number authorized. The definition of a promotion pass-over was changed to include only those "considered not fully qualified for promotion." This policy permits increased promotion selectivity and at the same time avoids the forced relief from active duty of reserve officers who have a potential for increased responsibility. Thus, an increased measure of career stability is provided for reserve officers. This policy made no change in conditions of tenure for regular officers, as prescribed by law.

Reserve Warrant Officer Program. The Army has adopted an active duty program for reserve warrant officers which includes selective retirement after 20 years' service, similar to the program in effect for reserve commissioned officers. This program is expected to improve the quality of warrant officers retained on active duty and to open up career fields for additional procurement in critical specialties.

Retention of Junior Officers. The pri-

Personnel and Improved Professionalism

many officer personnel problem which confronted the Army during the period of this report is the retention of capable young junior officers beyond their periods of obligated service. Because of declining personnel ceilings, means of maintaining junior officer strength such as recall programs and increased procurement have been denied. As a result, a critical shortage exists in the Officer Corps of officers with more than 2 but less than 10 years of service.

The problem exists in both the regular and reserve components. The majority of resignations of junior regular officers occurs during the first five years of service. The resignation rate for graduates of the West Point Class of 1954 was over 10 per cent at the end of three years of service. Among junior reserve officers, only 21.2 per cent were retained on active duty beyond the period of their obligated tours in FY 1958, although this was an improvement over the preceding two years, and there are indications of further improvement during 1959.

The Army's goals are to reduce regular officer resignations to no more than

2 per cent of those completing their three-year probationary service and to increase retention of junior reserve officers to at least 35 per cent of those completing obligated service. Results to date show progress toward achieving these objectives, but continued effort in this area is of significant concern to the Army.

Army ROTC Program. A comprehensive review of the Army ROTC Program was completed. The studies included in this review were addressed to the future and included examination of the entire concept of the ROTC in its broadest aspects. The primary objective of the studies was the determination of courses of action which will insure that the program will provide high caliber officers in sufficient quantity to meet the qualitative leadership requirements of the Army of the future. The studies also were concerned with the adjustment of the program to the concepts of today and the theories for war in the future.

The studies indicated that the present role of the ROTC, although ad-



Functioning of a new, improved mortar sight designed to aid effectiveness of the weapon is described to General Maxwell D. Taylor on field trip.

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minimally suited to the needs of the past, is not entirely attuned to present requirements or those which can be anticipated. As a result of this review, additional investigations have been initiated on various aspects of the program. One of the aspects now under consideration is a revision of the ROTC curriculum in order to make it an intellectual challenge and a stimulant to attract outstanding students. Each of the additional studies under development has but one objective—to stress, to seek, and to obtain the quality that the Army needs for its future leadership.

Reduction in Force. A reduction in force became necessary when, on 16 July 1957, the Secretary of Defense directed that the strength of the Army be cut by 50,000 personnel, to be completed by 31 December 1957. This reduction involved 5,530 officers and 44,470 enlisted personnel.

On 19 September 1957, the Secretary of Defense directed an additional reduction of 50,000 in the military personnel strength of the Army, to be completed by 30 June 1958 and to result in an end FY 1958 strength of 900,000. A second large-scale reduction in force of officers was avoided, however, by extending the deadline for achieving the reduced officer strength so that attrition and reduced procurement over a longer period would minimize the effect on individual officers resulting from involuntary releases.

Improved Career Attractiveness

FROM the standpoint of military personnel, the career attractiveness of the Army has been enhanced in two broad fields: expanded opportunity for the individual to improve himself through education, and improved conditions of service.

Education. The voluntary off-duty General Educational Development Program remained a mainstay of the Army's educational system throughout

the period. In FY 1958 over 47,000 enlisted personnel achieved the equivalent of a high school education and more than 7,000 passed the college-level test—accepted as the equivalent of a year in college. Officer and enlisted personnel together completed more than 400,000 courses, some 50,000 of which were in evening classes of colleges and universities. During the period, over 44,000 military personnel were enrolled in Army Education Centers for classroom instruction, with another 67,000 enrolled for correspondence courses at all times. The total college-level enrollment was more than 65,000 of which 18,000 officers and enlisted personnel received tuition aid. In FY 1959 there were approximately 350,000 course completions at all levels of education.

In March 1958 an expanded program was begun for the training of selected enlisted personnel in civilian educational institutions at both undergraduate and graduate levels in technical, scientific, managerial, and leadership fields. This was for the purpose of meeting specific future Army requirements, as discussed in the preceding chapter, "Army Operations and Training." Selected personnel attend classes on a full-time basis with all direct educational expenses defrayed by the Army.

The Army's requirement for officers with postgraduate training at the master and doctoral levels is met primarily through the Civil Schooling Program. During FY 1958, slightly over 400 officers entered this program at 60 American and 4 foreign educational institutions. Courses included both physical and social sciences, and advanced administration. The introduction of these officers into key positions by means of subsequent utilization tours is of major value to the Army's scientific, management and planning endeavors.

As FY 59 drew to a close, there were 632 officers in civilian graduate schools, with more than half of this number in the physical sciences and engineering

Personnel and Improved Professionalism

fields, and the remainder majoring in the social sciences, administration, and foreign languages.

A voluntary Contemporary Military Reading Program was begun in 1959 to encourage Army members to keep pace with current military affairs and related matters of national and international import. The objective of this program is to increase the professional and intellectual capabilities of Army personnel by an enhanced understanding and appreciation of the role of the Army and military power in national and world affairs.

With almost half of the Army's strength deployed overseas in over 70 foreign countries, the continuing need for linguistic proficiency in the Army is clearly evident. Officers not already proficient in a foreign language are encouraged to volunteer for language training. This program is conducted primarily at the Army Language School, and, where necessary, at recognized civilian schools. Enlisted personnel may also volunteer for language training consistent with Military Occupational Specialty requirements periodically announced by the Department of the Army.

Improved Conditions of Service. During the period of this report there has been steady and marked improvement in the conditions under which the members of the Army work and live. In the interest of developing and retaining a thoroughly professional force, such improvement must continue in order to compensate to a degree for the smaller total income potential of the Army careerist as compared with individuals of comparable skills and quality in private business or industry.

Among the more significant contributions toward improved conditions of service have been increased stability of duty tours and other improved assignment procedures; progress in acquiring adequate housing; the Dependent Medical Care (Medicare) Program; new pay legislation enacted in 1958; and

the adoption of new uniforms.

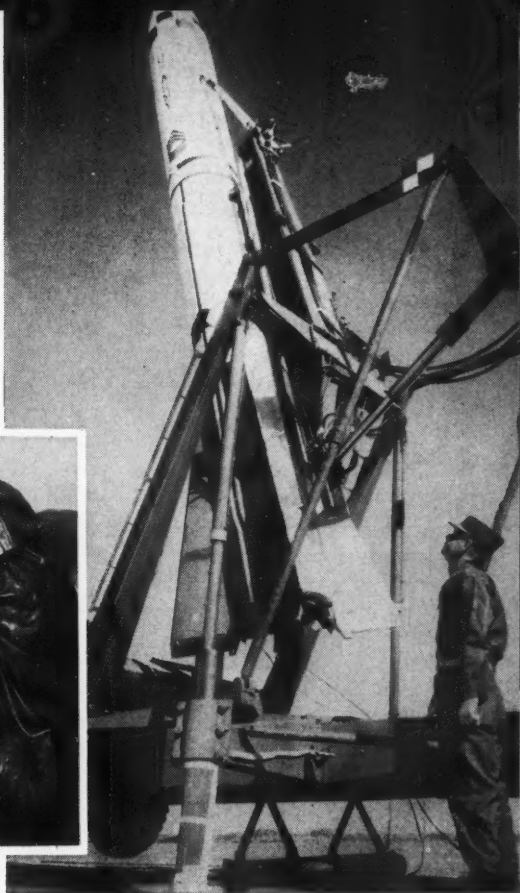
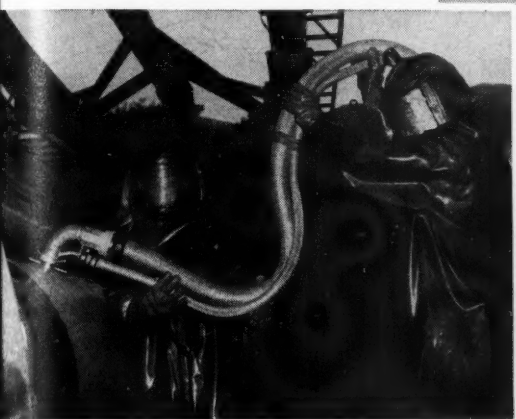
Stabilization and Duty Tours. Changes in the Army's strength, structure, and deployments required some adjustments in the length of stabilized tours in the continental United States. However, overall policies were placed in effect to attain the maximum level of stabilization, consistent with the needs of the Service and the nature of the duties being performed by individuals.

Contributing to stabilization, a concerted effort has been made to control permanent changes of station more effectively, particularly under the continued reduction in funds available for this purpose. While close and continuous supervision of existing policies must be continued, in time of military emergency—such as the Lebanon and Taiwan crises—restrictions on individual movements must be relaxed in order to prepare and position Army forces for possible commitment.

Foreign service tour policies and length of tours were standardized among all the Services on 1 July 1958 as a result of a review made by a Joint Services Working Group. The standard tour of duty for military personnel accompanied or joined by their families is 36 months in desirable areas, and 24 months in less desirable locations. The application of a differential for unaccompanied personnel follows the general patterns of 24 months in a standard 36-month area, and 18 months in a standard 24-month area. In those cases where the tour is inappropriate for a particular sub-area or locality, provision exists for an isolated tour of 12 months or more to be established. Factors considered in such cases are health conditions, climate, isolation, and similar conditions.

To provide maximum variety in successive overseas tours, the policy of rotation of overseas assignments among geographical areas has been continued by the Army. For example, an individual who has served a tour in the Far East or Pacific areas will, wherever pos-

Necessity for transfer of liquid fuel to Corporal missile (below) will be eliminated by solid-propellant Sergeant when it is issued to troops. New missile affords improved mobility, accuracy and reliability.



sible, normally be assigned to another area for his next overseas tour. This policy facilitates equitable geographical distribution of eligible individuals to desirable areas overseas where they may be accompanied by their families. As a corollary, unmarried younger officers and single enlisted personnel will not be required to serve more than their proportionate share of overseas duty in less desirable areas. As an added criterion, the total cumulative months of involuntary separation from families resulting from foreign service since 7 December 1941 is now considered in assigning personnel overseas.

On-Post Housing. Married personnel compose the hard core of the Army's trained leaders and skilled specialists;

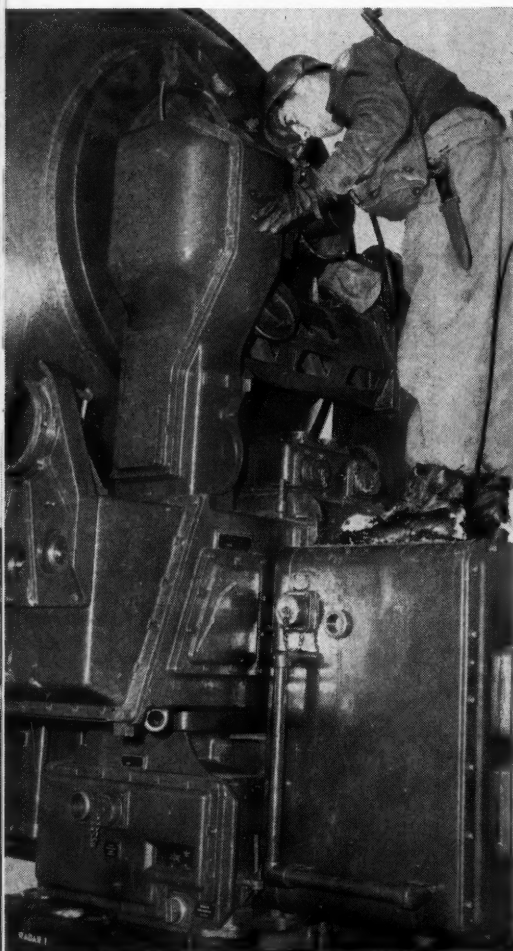
therefore their retention is a prime factor in overall Army effectiveness and economy. The Army made substantial progress during the period of this report in providing adequate on-post housing for military personnel. As of 1 July 1957 there existed a world-wide program shortage of nearly 62,000 Army family housing units. In the subsequent two years approximately 19,000 family housing units for officers and enlisted men were obtained, representing a 30 per cent improvement. The remaining shortage of some 43,000 units is expected to be further reduced during FY 1960 and subsequent years. However, even though considerable progress has been made, many military families are still required to live in substandard housing or in civil-

Personnel and Improved Professionalism

ian housing costing more than current rental allowances. This remains one of the most critical morale problems confronting the Army.

Medicare. In slightly more than two years of operation the Dependent Medicare Program has done much to maintain and improve the morale of military members and their families. Surveys indicate that the availability

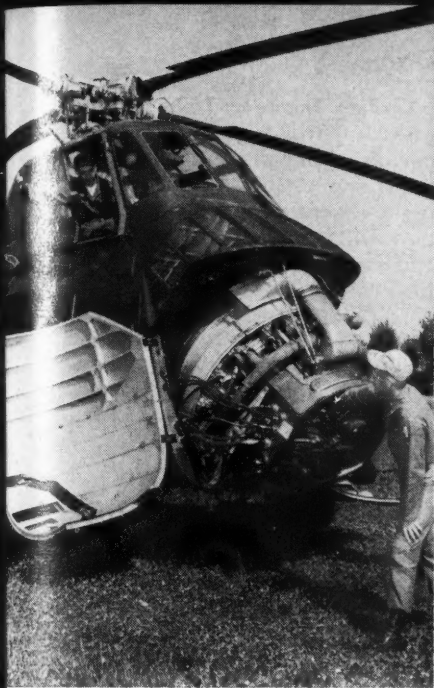
Complex Army equipment requires capable specialists to insure effectiveness on the nuclear age battlefield.



of assured medical care for family members—especially during the absence of the head of the family overseas—has been a significant consideration in personal decisions to continue in military service. The primary complaint regarding the program has been the elimination of dental care, previously authorized for members of military families. It is also probable that recent limitations imposed by the Congress on the operations of this program may create an adverse morale effect.

Pay. It is generally accepted by Army career personnel that pride of service, the comradeship of military life, and a career devoted to national security are compensations to which no monetary value can be assigned. However, their value can seriously diminish if the monetary compensation received does not permit military people to live and maintain their families in keeping with the standards of the community with which they associate. Thus, an adequate, progressive pay scale is essential for the development of a truly professional force, especially in the light of continuing competition by business and industry for the skills and qualities developed in Army personnel.

Significant improvement in military compensation was achieved in the enactment of legislation in 1958 providing increased pay. Concurrently, the creation of the two new top enlisted pay grades, and the subsequent actions which the Army undertook through the Enlisted Management Program discussed earlier in this chapter, were major stimuli to morale and increased professionalism. While the pay legislation was of major importance to current active duty personnel and those retiring subsequent to its passage, its failure to provide equal compensation to individuals retired prior to the enactment of this legislation with the pay of those subsequently retired has created a serious morale problem. This



Technological advances, growing complexity of operations—all impose an ever increasing need for quality personnel capable of being trained in a wide variety of difficult jobs through the Army school system.

relates not only to those retired, but to active duty personnel contemplating their eventual retirement.

New Army Uniforms. The adoption of the Army Green uniform for general wear has resulted in a marked improvement in the distinctive appearance of the members of the Army and the personal pride of the individual.

Army Civilian Personnel

IMPROVED professionalism and career conditions among Army civilian employees also has been a priority effort in the period covered by this report. Substantial progress has been made in raising the level of skills and in developing a professional, career-minded approach to many of the occupational areas in which civilian personnel are employed.

Career Planning. The key to promoting professionalism is a system of

command-wide and Army-wide career programs. The basic policies for these programs were promulgated in an overall Civilian Career Plan in July 1957. Command-wide career programs now cover about 70,000 employees. Six functional chiefs have been designated to direct the development of 12 Army-wide career fields covering 18,000 employees. Two Army-wide civilian career programs are nearing completion and are scheduled to become fully operational during 1959.

Merit Promotion Program. During the past two years, emphasis has been placed on assuring that the best qualified employees are selected for promotion. Guidelines for promotion programs were furnished to all Army installations for use in local evaluation of promotion policies and practices. From these, installation commanders and civilian personnel supervisors were able to make improvements or altera-

Personnel and Improved Professionalism

tions to meet the requirements of a new Merit Promotion Program, intended to assure the continuing identification and selection of employees best qualified for advancement. This Merit Promotion Program became effective 1 January 1959.

Supervisor Selection Program. In November 1957, specific requirements were established by the Department of the Army for selection of civilian supervisors, in order to achieve further improvements in the quality and effectiveness of leadership of the civilian work force. The objective of this program was to emphasize the selection of supervisory personnel and the importance of evaluating leadership ability as well as technical knowledge and experience. The program was fully in operation at installation levels by the end of the report period.

Overseas Interchange Program. Over the past two years, the operations of this program have undergone steady improvement. In 1958, 79 per cent of all vacancies in overseas competitive positions were filled by transfer of career Army employees from the United States. Placement of returnees did not present as favorable a picture. Slightly over 50 per cent were placed in Army positions in the continental United States in 1958. An additional 10 per cent were placed in other Federal agencies. Many qualified returning employees, however, are not applying for returnee placement.

Secretary of the Army's Research and Study Fellowships. Under this program, 39 Fellows have been selected to date. Twenty-five have completed their research and study projects and 11 others are currently engaged in various phases of study. It is anticipated that this program will make a substantive contribution toward advancing scientific, engineering, and management knowledge within the Army.

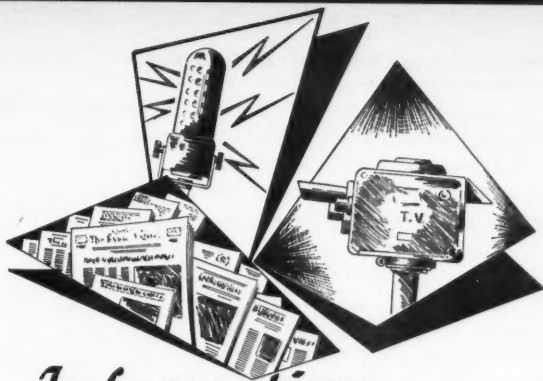
Civilian Employee Training. An improved system for estimating and reporting Army-wide civilian training needs was established in 1958. This improvement in training administration will permit improved direction and use of resources available for training employees to higher levels of competence. During FY 1958, employees received a total of 8.6 million man-hours of training, averaging 23.6 man-hours per individual, with only 6 per cent of the training conducted outside Army facilities. Emphasis has been placed on supervisor training and executive development.

The Cooperative Education or Work-Study Program allows students to be employed at Army installations during alternate periods of their academic programs, and has proven productive in obtaining the services of high caliber young college graduates. There are currently nearly 900 engineering, science, and accounting students involved in this program at 32 Army installations. Over the past 18 months, 74 per cent of the graduates in this program accepted employment by the Army in professional positions.

Many advances have been made during the period of this report with regard to the policies, management procedures, and actions which bear on the Army's most valuable asset—the men and women of its uniformed ranks and its supporting civilian work force. As a direct effect of the resultant qualitative improvement of Army personnel, both military and civilian, the missions and tasks of the Army have been accomplished with steadily improving efficiency and economy of force.

The future of the Army and its contributions to the security of the United States have never been in the hands of more dedicated, patriotic American men and women than those who serve today. They are worthy of the Nation's gratitude and trust for the manner in which they have performed their arduous, frequently dangerous, and always demanding duties.

CHAPTER SIX



Information AND RELATED ACTIVITIES

TWO basic tenets of American democracy—the people's right to know, and the public servant's duty to report to the people—were the basis for the Army's Information Program during the period. This program embodies both internal and external aspects. The former derives from the American soldier's need to know both *what* he is expected to do and *why* he is expected to do it, so that he may fulfill his role as a fighting man with a full measure of the skill, initiative, and devotion required in the modern Army. The external effort seeks to satisfy the public's continuing right to information about its Army. The ultimate goal of the overall information effort is understanding, confidence and demonstrated support both from within the Army and from the general public.

The character of this program has been shaped by the need for troop and public comprehension of the Army's role as an indispensable element of our national war-deterrent posture; the related missions and tasks of the Army; and the stature of the Army as an essential progressive public institution, drawing its strength from the American people. The effort to satisfy that need has proceeded along the three interrelated avenues of troop information, public information, and community relations.

The Broad Base. The foundation of the Army's public relations structure is its thousands of officers, enlisted and civilian personnel, reservists, and friends in communities all over the world. Inherent in the Information and Community Relations Programs has been the effort to make these friends both knowledgeable and articulate. Through staff visits, commander's briefings, printed materials and all modern media of communications, this many-voiced foundation has been provided with factual bases for understanding the Army's roles, needs, and contributions to national and Free World security.

Troop Information Program. An informed Army has been the primary objective during the period of this report. The broad goals and subject areas of the Troop Information Program are adapted by each commander to the particular needs of his organization, from army to company levels. As a command responsibility, and one which defers to the considered requirements of the individual commander, Troop Information is a practical and highly productive tool of leadership.

Commanders accomplished this program using a number of means—informal troop briefings, formal instruction, and a variety of audio-visual

Information and Related Activities

methods. To aid them, the Department of the Army provided a wide range of information materials. Publications included: *Troop Topic* pamphlets; the *Army Information Program Support* series for timely dissemination of information touching on matters of Army-wide concern; the Secretary of the Army's annual reports, *Progress 1957* and *Progress 1958*; and the *Army Information Digest*, among others. An outstanding example of informational films was *A Sharper Sword, A Stronger Shield*—a concise portrayal of the necessity for a modern Army and the requirements which must be satisfied for it to maintain qualitative superiority. The Army News Service also supported the commanders' programs by means of a biweekly clip-sheet service to over 350 Army newspapers. Radio and television facilities were extended to nearly every area in the world where American troops are stationed. These facilities not only kept the Army informed but reached foreign peoples throughout the Free World with the positive influence of factual news and information about America.

Public Information Program. A more effective Public Information Program was attained by an increased, sustained flow of Army material to all civilian communications media. Army public information agencies concentrated on closer liaison with these media and provided the American public with an accurate picture of the Army's position on internal and external issues, as well as Army accomplishments and requirements. Especial emphasis on the Army's pentomic reorganization, on STRAC, and on the air defense and missile programs, exerted through varied media, contributed to greater understanding of Army tasks and accomplishments.

Community Relations Program. The Army's continuing local Community Relations Programs and activities were

particularly successful during the period of this report. These installation-level "good neighbor" efforts moved through such channels of face-to-face communications as local Civilian Advisory Committees, speakers, troop and Army Band participation in civic events, periodic Army exhibits, and open house and guided tour programs. To support their local programs, commanders were furnished with case studies of successful community relations projects and various plans for dealing with varied problems of joint military-community concern. Emphasis was placed on increasing participation of retired officers in community relations efforts, establishing liaison with schools and colleges and arranging appearances by Army speakers before such audiences, and encouraging Army civilian employees to participate actively in local community relations endeavors.

In overseas areas, positive steps were taken during the period to identify the Army's Community Relations Program with the President's People-to-People Program. These efforts met with much favorable "grass roots" reaction as well as official recognition and appreciation by foreign governments and worthy international bodies.

During the period, the Army's public relations effort has been significantly successful. Community confidence in the United States Army has been fostered, and better understanding of the Army by both the American and foreign public has been achieved. From this confidence and understanding of the Army as a progressive and essential public institution has stemmed increased public support of the Army's activities and objectives.

American soldiers everywhere have exhibited increased awareness of their responsibilities and obligations as fighting men, and have demonstrated marked appreciation of their roles as representatives of the American community and our national way of life.

CHAPTER SEVEN



THE CHALLENGE AHEAD

The Major Problems. Although the Army has achieved significant success in some areas, there are important unresolved problems affecting the internal development of the Army and its role in national defense. They include:

1. The achievement of a properly balanced national military strategy.

2. The determination of yardsticks of sufficiency for all categories of forces required to support this balanced strategy.

3. The development of a budget-making process which will assure that funds are allocated in consonance with the true needs of this strategy.

4. Acceptance of the role of the Army in the execution of this strategy, together with the allocation of the necessary means to perform this role.

5. A better understanding of the Army's tasks in air defense and the urgency of its Nike-Zeus program.

Major Considerations. The requirements for our future security derive from the growing aggressiveness of the

Sino-Soviet empire in international relationships and its deliberate disregard for international hopes for peace. It appears likely that the Soviets will keep the world in a state of tension. Because of the tremendous leverage which the Communist bloc is capable of exerting by the application of massive military power, the U. S. must maintain armed forces in being capable of offsetting this power.

As the nature of this threat is dynamic so must the outlook of the Army remain dynamic. To contribute effectively to the national efforts to meet this threat, the Army must seek not merely to keep apace, but to anticipate its changing nature. With this objective in mind, the following broad courses of action by the Army are considered necessary if it is to make its needed contribution.

A Properly Balanced Military Strategy.

First, through all proper channels available, the Army must continue to press for a change in the underlying

The Challenge Ahead

premise of our national military strategy from the strategic concept of massive retaliation to one of flexible response, based on a wide range of integrated, balanced military strength.

Yardsticks of Sufficiency. A major element in achieving a properly balanced military strategy would be the determination by the Joint Chiefs of Staff of the kinds and quantities of operational forces necessary, based on agreed yardsticks of sufficiency. Such a determination and the resultant rational force structure would have many significant advantages. The determination of how much is enough in each category of force should increase our visible, ready deterrent strength without a marked increase in overall Defense expenditures, as a result of a more balanced allocation of fiscal resources in keeping with a strategy of flexible response. All services and functional forces would assume a form and size appropriate to their missions and tasks. Excesses would be eliminated and deficiencies filled in the aggregate force structure.

A Sound Budget-Making Process. To make effective such a revision of strategy and determination of forces, the Army must continue to press for a fundamental change in the present inflexible pattern of the Defense budget which annually allocates some 70 per cent of available resources to preparations for deterring or fighting general war. A rational Defense budget-making procedure, based on a horizontal analysis of the categories of functional operational forces, is considered to be an important first step toward a better use of defense assets.

Essentiality of Army Missions. As has been earlier stressed herein, success in battle is achieved by the proper combination of firepower, mobility, communications and personnel. History has shown the fate of armies of the past that failed to obtain the combina-

tion of these characteristics necessary to defeat the enemies they were called upon to face. This consideration relative to the threat of today and the future, lends emphasis to the need for a better acceptance of the essentiality of the missions of the Army in the execution of a balanced military strategy, and the allocation of the necessary means to discharge these missions. Such an acceptance would support the need for an orderly, financed equipment modernization program for the Army. This is vital for the twofold purpose of increased effectiveness of the active Army and high priority ready reserve units, as well as overcoming the growing obsolescence of the current Army equipment inventory.

Army modernization objectives should seek essential improvement in terms of the characteristics mentioned above, discussed as follows:

Production is required of the second generation of Army surface-to-surface missiles which have been developed to improve Army firepower. These missiles should provide better performance characteristics, reliability, lighter weight, and greater versatility. In addition to improved atomic components, if appropriate, they should be furnished with improved high explosive, fragmentation, and chemical warheads. Ground-gaining combat units will continue to require close-in direct support fires of greater efficiency and battlefield adaptability. From this stems the earlier stated requirement for the close-range sub-kilaton atomic weapons as well as new non-atomic close fire support means to supplant obsolescent types of conventional tube artillery.

At the point of contact with the enemy, the rifle, machine gun, and mortar remain the basic tools of close combat. The lighter, more efficient types which have been developed should be produced more expeditiously in order to replace the numerous World War I and II weapons now in the hands of troops. These improved weapons will not only increase the battlefield effec-

iveness of small units, but will pay added dividends in the simplification of small arms logistics in the forward combat areas.

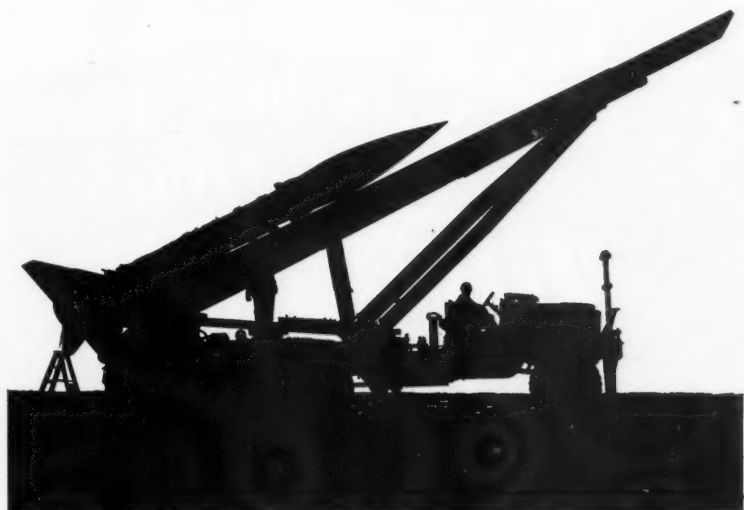
In addition to the need for improved means of strategic mobility required from the other Services, continued improvement of the Army's tactical mobility on the modern battlefield remains essential to the rapid maneuver necessary to bring firepower and the decisive effect of close combat to bear at the critical point. Wheeled, tracked, and aerial vehicles—with greater range, economy of operation, and reduced maintenance—have been developed and are urgently needed in our troop units.

The desire for aerial vehicles does not mean that the Army contemplates duplication of any of the missions performed by the Air Force or the establishment of an air arm for the Army. Rather, these vehicles are the organic means which the Army should have to overcome obstacles to effective ground maneuver and reconnaissance, and they are a necessity when operating against numerically superior forces. From the standpoint of close ground combat, the protected mobility and firepower afforded by improved tanks and armored carriers becomes most significant with

respect to maneuvering through the fireswept or nuclear contaminated areas of possible future battlefields. Production of a new family of armored vehicles having lighter weight, greater killing power, and reduced logistical demands is an essential requirement for the future.

Flexible and responsive communications constitute the nerve system of command. For the future, the Army must focus on greater versatility of communications systems at all levels; simplicity; decreased size, weight, and power requirements; and component standardization for communications equipment. Most of these items have been developed but their production must be speeded up to provide early replacement for the interim, obsolescent equipment with which our forces are now equipped.

Closely allied with Army objectives in the firepower field, and the increased tempo of operations attainable through improved mobility, is the imperative requirement for all-weather, 24-hour surveillance and target acquisition means. Without such means, our longer range modern weapons can be rendered relatively useless against enemy targets dispersed in width and in depth. As a result of intensive re-



The Challenge Ahead

search and development effort, there are in sight many of the items required for such systems but, again, procurement lags behind the need and requires new emphasis.

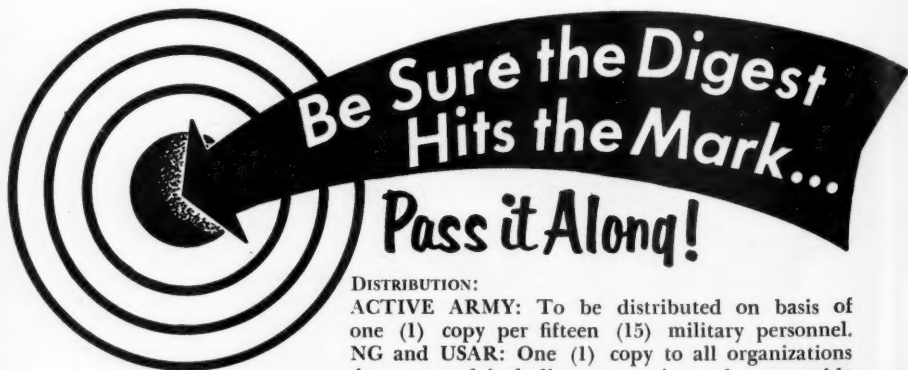
The foregoing discussion of Army modernization objectives should not imply that the Army does not continue to regard its people as its most valuable asset. This recognition of the importance of the human factor must continue into the future when new and complicated weapons, employed in a strange and demanding battlefield environment, will impose greater demands on the soldier than ever before. Thus, the established trends toward improved quality in the Army's people must be continued and intensified.

The Army's Role in Air Defense. There is a pressing need for achieving a better understanding and acceptance by the other Military Services, the public, and the higher levels of government, of the nature and importance of the Army's role and capabilities in the air defense field. These are based on the proven performance of operational Army surface-to-air missiles and their established capabilities against all foreseeable manned or unmanned air-breathing threats against the United States at all possible altitudes of attack.

Moreover, in the light of the probable Soviet long-range ballistic missile capability of the near future, full support should be sought for the Nike-Zeus. As the Nike-Zeus is the only antiballistic missile weapons system under development, its early deployment is of vital significance if the United States is to maintain the effective defense essential to the deterrence of general war. Further loss of leadtime in the production of this system could result in consequences of grave import to the Nation.

Conclusion

ALTHOUGH this report has concerned itself only with the state of the Army, full recognition is given to the tri-Service character of our national defense. In the words of President Eisenhower, "Separate ground, sea, and air warfare is gone forever," and the Army supports this view without reservation. The national security requires military strength in being on the ground, on the sea, and in the air, capable of coping with the wide range of possible challenges with appropriate forces and weapons. The Army faces the future resolved to play with competence its essential part in this tri-Service effort.



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shall not perish from the earth!"*

